

**STATE OF CONNECTICUT**  
**CONNECTICUT SITING COUNCIL**

IN RE:	:	
	:	
PETITION OF DERBY FUEL CELL, LLC	:	PETITION NO. _____
FOR A DECLARATORY RULING THAT A	:	
CERTIFICATE OF ENVIRONMENTAL	:	
COMPATIBILITY AND PUBLIC NEED IS	:	
NOT REQUIRED FOR THE INSTALLATION	:	
OF A FUEL CELL AT 200 ROOSEVELT	:	
DRIVE IN DERBY	:	
	:	MAY 23, 2019

**PETITION FOR DECLARATORY RULING:**  
**INSTALLATION HAVING NO SUBSTANTIAL ENVIRONMENTAL EFFECT**

**I. INTRODUCTION**

Pursuant to Connecticut General Statutes (“Conn. Gen. Stat.”) § 16-50k, Derby Fuel Cell, LLC (“DFC”), a wholly-owned subsidiary of FuelCell Energy, Inc. (“FCE”), hereby petitions the Connecticut Siting Council (the “Council”) for a declaratory ruling (“Petition”) that a Certificate of Environmental Compatibility and Public Need (“Certificate”) is not required for the installation of a 14.0 megawatt (“MW”) fuel cell power generating facility, including all associated equipment and related site improvements at 200 Roosevelt Drive in Derby, Connecticut, as described herein (collectively, the “Project”).

Conn. Gen. Stat. § 16-50k(a) provides, in pertinent part:

Notwithstanding the provisions of this chapter or title 16a, the council shall, in the exercise of its jurisdictions over the siting of generating facilities, approve by declaratory ruling . . . the construction or location of any fuel cell unless the council finds a substantial adverse environmental effect . . . .

DFC respectfully submits that the construction and operation of the proposed Project satisfies the criteria of Conn. Gen. Stat. § 16-50k(a) and, as described in more detail below, will not have a substantial adverse environmental effect.

## **II. PROJECT BACKGROUND / THE PETITIONER**

FCE submitted the Project into a Request for Proposal offered by the Connecticut Department of Energy and Environmental Protection (the “DEEP”) pursuant to Section 10 of Public Act 17-144, *An Act Promoting the Use of Fuel Cells for Electric Distribution System Benefits and Reliability and Amending Various Energy-Related Programs and Requirements* (the “RFP”). The DEEP selected the Project pursuant to the RFP.

DFC is a wholly-owned special purpose subsidiary of FCE created for financing purposes for this Project. FCE is a Delaware corporation with a principal place of business at 3 Great Pasture Road, Danbury, Connecticut. Pursuant to the award of the Project by the DEEP, DFC has entered into a power purchase agreement with each of The Connecticut Light and Power Company d/b/a Eversource Energy and The United Illuminating Company (each, a “PPA”) whereby DFC will design, install, own and operate five (5) of FCE’s SureSource 3000 fuel cell power plants nominally rated at 2.8 MW each, for a total Project nameplate of 14.0 MW. FCE will be responsible for the construction and long-term service of the Project under a contract with DFC for the term of the PPAs, which is twenty (20) years. DFC has entered into a lease agreement with IDA Properties, Inc., a Connecticut corporation (“IDA”), pursuant to which DFC shall rent from IDA a portion of IDA’s property (the “Site”) at 200 Roosevelt Drive, Derby, Connecticut for purposes of the Project.

Correspondence and/or communications regarding this Petition should be addressed to:

Dmitriy Kamenetskiy  
Project Manager

FuelCell Energy, Inc.  
3 Great Pasture Road  
Danbury, CT 06810  
(203) 825-6142 (office)  
(203) 825-6100 (fax)  
[dkamenetskiy@fce.com](mailto:dkamenetskiy@fce.com)

A copy of all such correspondence or communications should also be sent to the Petitioner's attorneys:

Jennifer D. Arasimowicz, Esq.  
Henry Sire, Esq.  
FuelCell Energy, Inc.  
3 Great Pasture Road  
Danbury, CT 06810  
(203) 205-2481 (office)  
(203) 825-6069 (fax)  
[jarasimowicz@fce.com](mailto:jarasimowicz@fce.com)  
[hsire@fce.com](mailto:hsire@fce.com)

### **III. FACTUAL BACKGROUND**

#### **A. Public Benefit**

A public benefit exists if a project "is necessary for the reliability of the electric power supply of the state or for a competitive market for electricity." Conn. Gen. Stat. § 16-50p(c)(1). The State of Connecticut has further articulated its energy goals in the Comprehensive Energy Strategy as encouraging the provision of cheap, clean, reliable electricity, fostering the development of microgrids and promoting economic development and job growth. As a distributed, baseload source of electricity, the Project will reduce the electric load that would otherwise be required of the electric grid, thereby reducing stress on the system and reducing load on overloaded transmission lines. The fuel cell power plant will be manufactured in Connecticut, and installed and operated by FCE on behalf of DFC. Thus, the Project satisfies the articulated goals of the Comprehensive Energy Strategy.

## **B. Project**

FCE will build and operate the Project to be located at the Site in Derby, Connecticut. The Project will be installed on an approximately 192 foot x 198 foot area surrounded by an approximately eight (8) foot-high chain link fence with barbed wire. The Project will be elevated six (6) feet above finish grade to account for the 100-year floodplain and zone elevation. *See* Exhibit A for a preliminary project drawing and Site photographs.

The Project will include five (5) natural gas-fired SureSource power plants manufactured by FCE and will generate a nominal 14.0 MW of Connecticut Class I renewable energy that will be exported to the utility grid.

The Project consists of multiple skids classified into three (3) major subsystems. The mechanical balance of plant (“MBOP”) is comprised of three (3) separate components; the desulfurization system, the main process skid, and the water treatment system skid. The MBOP supplies fresh air, cleans and heats fuel and water, and includes the power plant control system. The electrical balance of plant (“EBOP”) is comprised of four (4) sections: one (1) power conditioning unit, two (2) transformers and one (1) switchgear for grid connection. The EBOP converts the fuel cell DC power into utility grade AC power. Each SureSource 3000 power plant consists of two (2) SureSource modules. Each SureSource module performs the electrochemical conversion of the continuous fuel supply into DC electric power. Each SureSource module contains four (4) fuel cell stacks. Each stack contains the assembly of electrochemical cells that produce DC power. Resembling a large battery, each of the four (4) stacks is constructed of approximately 400 individual fuel cells clamped together with manifolds inside an insulated container.



### **C. Local Input**

Representatives of FCE have met with officials from the City of Derby, including Mayor Richard Dziekan, on a number of occasions to discuss the Project. Mayor Dziekan's support for the Project was essential to FCE's decision to bid the Project into the RFP. Subsequent to the DEEP's selection of the Project, FCE representatives met with Mayor Dziekan and members of his staff on July 11, 2018 and appeared before the City of Derby's Board of Aldermen and Alderwoman on January 24 and February 14, 2019, in each case, to provide updates regarding the Project. The Board of Aldermen and Alderwoman voted on February 14, 2019 to authorize the Mayor to write a letter of support for the Project, which is attached hereto as Exhibit B.

### **D. Notice of Petition**

A copy of this Petition has been sent to each person appearing of record as an owner of property that abuts the Site and to relevant Connecticut state agencies, the Attorney General, regional planning agencies, legislators representing Derby and representatives of the City of Derby, all as set forth on Exhibit C attached hereto.

## **IV. THE INSTALLATION WILL NOT HAVE A SUBSTANTIAL ADVERSE ENVIRONMENTAL EFFECT**

The Project will provide 14.0 MW of clean electrical energy without the environmental impacts normally associated with the use of natural gas as a fuel.

### **A. Materials Storage**

Approximately 11,356 litres of liquid nitrogen will be stored on-Site to be used in the Project. Nitrogen is non-toxic; however, it is a Department of Transportation Division 2.2 (non-flammable gas) hazardous material. There are no U.S. Environmental Protection Agency ("EPA") reporting requirements for nitrogen.

### **B. Public Health and Safety**

The Project will be located at the Site as depicted in Figure 1 below. The roadways in the area are adequate for all deliveries to support the construction and operation of the Project. The limited number of truck trips necessary to support installation will not have any adverse impacts on local roadways or traffic conditions. Operational personnel trips will be insignificant, as the Site will be unmanned and only visited periodically by technicians.

**Figure 1**



The Project has been designed with significant attention to protecting the community sound environment. The core of the fuel cell technology (*i.e.*, the SureSource module) will produce no significant sound. Ancillary equipment associated with the Project includes a blower that will pump fresh air through a silencer into the main process skid. An air conditioning unit, which is similar to many used in residential applications, will be located above the water treatment cabinet to support equipment inside the cabinet and will produce sound only when the fan is actively providing cooling for the system. Relatively small transformers and electrical buses and inverters, as well as fans providing ventilation to some of the equipment, will produce modest sound. Under normal conditions, these few acoustic sources would produce consistent sound throughout the day and night.

The acoustic levels associated with the Project were estimated at community receptors per the Regulations of Connecticut State Agencies (“R.C.S.A.”) § 22a-69-1 *et seq.* The Site is an existing commercial or industrial property on Roosevelt Drive, which is a busy highway with a high volume of truck traffic. Parcels along Roosevelt Drive support manufacturing, commercial and electrical generation applications, so there is fair amount of ambient noise. As shown in Table 1 below, the sound modeling indicates that the Project can be operated at the Site within applicable noise performance criteria. *See* Facility Sound Assessment attached as Exhibit D.

**Table 1**

<b>Receptor</b>	<b>Distance from Project (ft)</b>	<b>Project Sound (dBA)</b>	<b>Criterion (dBA)</b>
Residential, North1	670	42	61/51
Residential, North2	570	49	61/51
Residential, North3	650	48	61/51
Commercial, North	205	55	66
Commercial, East	575	45	66
Industrial, East	580	44	70
Open Space, South	1000	42	61/51
Residential, South1	1140	39	61/51
Residential, South2	1135	40	61/51

Prior to operation, FCE will discuss the Project with the Derby Fire Department. In addition, in accordance with the Council's Final Decision in Docket NT-2010, DFC is attaching an Emergency Response Plan ("ERP") for the Council's review. *See* ERP attached as Exhibit E. The ERP includes the following information:

- A description of any simulated emergency response activities with any state and/or local emergency response officials;
- Details of any facility Site access system; and
- Establishment of an emergency responder/local community notification system for on-Site emergencies and planned construction-related activities that could cause community alarm.

All other requirements of the NT-2010 Decision will be adhered to.

Project design has begun, and the drawings attached as Exhibit A represent preliminary drawings depicting the site installation.

#### **C. Scenic Values**

The proposed Project will have little impact on the visual character of the community. Generally, the potential visual impact is inherently small due to the low profile of the Project in the context of the existing buildings adjacent to the Site and the industrial nature of the area in which the Project will be situated. The Site is bordered on the northeast side by Roosevelt Drive and an existing canal; views on this side will be partially obstructed by trees and shrubs. Views to the southeast will be obstructed by the existing Indian Well substation. Views to the northwest will be obstructed by an existing building owned by IDA. The Site is bordered on the southwest side by the Housatonic River and views on this side will be partially obstructed by trees.

#### **D. Historical Values**

A request was made with the Connecticut State Historic Preservation Office ("SHPO") regarding the Project's effect on historic, architectural or archaeological resources listed on or

eligible for the National Register of Historic Places. In response, the SHPO indicated that the Project would have no adverse effects on the State's historic, architectural or archaeological resources. *See* Correspondence attached as Exhibit F.

#### **E. Air Quality**

Air emissions from the fuel cell associated with the Project, assuming continuous year-round full power operation, are conservatively expected to be as follows:

**Table 2**

<b>Pollutant</b>	<b>Total Potential Emissions (tpy)</b>
Oxides of Nitrogen ("NO <sub>x</sub> ")	0.0613
Oxides of Sulfur ("SO <sub>x</sub> ")	0.0066
Particulate Matter ("PM")	0.0012
Carbon Monoxide ("CO")	6.132
Volatile Organic Compounds ("VOC")	1.226
Carbon Dioxide ("CO <sub>2</sub> ")	60,094

In addition to the emissions from the fuel cell power plant itself, there will also be minor emissions associated with the five (5) 10 MMBtu/hour gas-fired startup burners that will be included with the fuel cell power plant. The burners are used only intermittently to heat up each fuel cell to its required operating temperature. The criteria pollutant potential emissions from the plant (assuming maximum burner heat output and 8,760 hours of operation) that are associated with each burner are less than 15 tpy using measured emissions factors.

Total emissions from the proposed Project will be below levels that would render the Project a "major stationary source" as defined at R.C.S.A. § 22a-174-1(63). The Project's maximum emissions will operate well below the serious non-attainment area thresholds for VOC and NO<sub>x</sub>. Thus, the Project will be a minor source and is not subject to Federal Non-Attainment

New Source Review (“NSR”). Also, there is no requirement for emission offsets for this Project as it will be below the non-attainment NSR major source thresholds.

A Permit to Construct and Operate Stationary Sources is not required for the Project because the potential emissions of any individual air pollutant from each emission unit are less than 15 tpy; the source is not a new major stationary source; and, the source is not a new major source of hazardous air pollutants. The Project is also not subject to the DEEP’s “permit by rules” because the potential emissions from the fuel cell are less than 15 tpy. Thus, there are no registrations or applications required to be submitted to the DEEP; nor are there anticipated to be any approvals from the DEEP Air Bureau required prior to the construction and operation of the Project.

On May 13, 2010, EPA issued the final greenhouse gas (“GHG”) Tailoring Rule. This rule effectively raised the thresholds for GHG emissions that define when permits under the Prevention of Significant Deterioration and Title V Operating Permit programs are required for new and existing industrial facilities. However, since the potential GHG emissions from the Project will be well below the 75,000 tpy trigger established by the Tailoring Rule, those emissions will not trigger the requirement for an air permit.

Electrical energy generated by the Project will generate 980 lbs/MWh of CO<sub>2</sub>, as compared to the average CO<sub>2</sub> footprint of utility grid power, which is 1,501 lbs CO<sub>2</sub> per MWh (EPA EGRID 2016 (February 2018) US, non-baseload). Consequently, the Project will generate 521 lbs/MWh less CO<sub>2</sub> – or approximately 31,948 fewer tons per year – than utility grid power.

#### **F. Water Quality**

The Site is not located within a 500-year floodplain but is located within a 100-year floodplain. The Project has been designed to account for the 100-year floodplain – as mentioned

above, the Project will be elevated six (6) feet above finish grade. There are no wetlands or hydric soils at or near the Site.

The Project will require a DEEP general permit construction stormwater pollution prevention plan as the Site is over one (1) acre. However, neither groundwater in the Site vicinity nor nearby surface water bodies (including Lake Housatonic and the Housatonic River) will be impacted by the installation and operation of the Project. Limited excavation of soils will be required for installation of the Project and no wastewaters will be discharged on-Site. To the extent necessary, the small number of personnel periodically operating and/or maintaining the Project will use existing sanitary facilities at the Site.

The fuel cells to be installed as part of this Project (i.e., the SureSource 3000 power plant) will require approximately 65,000 gallons per day (“gpd”) of raw water and will discharge approximately 32,500 gpd of wastewater. Most of the makeup water will be released as water vapor with the fuel cell exhaust gas. Water will be obtained from a new water line installed from the South Central Connecticut Regional Water Authority and the wastewater will be discharged to the Derby Water Pollution Control Authority. The Project will register under the DEEP’s Miscellaneous Sewer Compatible Discharges general permit. In short, adequate water supply and infrastructure are available to supply the Project, and no substantial adverse environmental effect will occur from the Project’s water use and wastewater disposal.

#### **G. Fish and Wildlife**

A request was made with the DEEP for a review of the Natural Diversity Data Base Map. In response, the DEEP indicated that the Project will not impact any extant populations of Federal or State Endangered, Threatened or Special Concern Species that occur in the vicinity of this property. *See* Correspondence attached as Exhibit G.

## **H. Summary**

Overall, the proposed installation will have an incremental visual impact and will not cause any significant change or alteration in the physical or environmental characteristics of the Site or the surrounding area. In fact, as discussed in Section IV.E above, the Project will actually provide an environmental benefit to the State of Connecticut by reducing CO<sub>2</sub> emissions by approximately 31,948 tpy as compared to utility grid power.

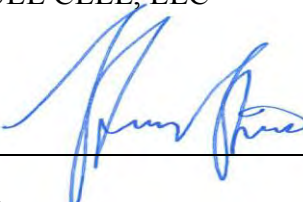


## V. CONCLUSION

For all the foregoing reasons, DFC respectfully requests that the Council issue a determination, in the form of a declaratory ruling, that the proposed installation as described above is not one that would have a substantial adverse environmental effect and, therefore, that a Certificate is not required.

Respectfully submitted,

DERBY FUEL CELL, LLC

By 

Henry Sire, Esq.  
FuelCell Energy, Inc.  
3 Great Pasture Road  
Danbury, CT 06810  
Phone: (203) 205-2481  
Fax: (203) 825-6069  
E-mail: [hsire@fce.com](mailto:hsire@fce.com)

Its Attorney

**Exhibit A**

Preliminary Project Drawing and Site Photographs

*See attached.*

SCALE 1"=20'-0"

## Exhibit A











Petition of Derby Fuel Cell, LLC  
May 23, 2019  
Exhibit A





Petition of Derby Fuel Cell, LLC  
May 23, 2019  
Exhibit A





Petition of Derby Fuel Cell, LLC  
May 23, 2019  
Exhibit A





Petition of Derby Fuel Cell, LLC  
May 23, 2019  
Exhibit A





Petition of Derby Fuel Cell, LLC  
May 23, 2019  
Exhibit A





Petition of Derby Fuel Cell, LLC  
May 23, 2019  
Exhibit A





**Exhibit B**

Mayor Richard Dziekan's Letter of Support for the Project

*See attached.*



**Mayor Richard Dziekan**  
*One Elizabeth Street*  
*City of Derby, Connecticut 06418*  
[rdziekan@derbyct.gov](mailto:rdziekan@derbyct.gov)

April 15, 2019

Ms. Melanie Bachman  
Executive Director  
Connecticut Siting Council  
10 Franklin Square  
New Britain, CT 06051

RE: Fuel Cell Energy - Derby Project  
200 Roosevelt Drive, Derby, CT 06418

Dear Executive Director Bachman:

I am writing in support of Fuel Cell Energy's (FCE) petition before the Connecticut Siting Council with respect to its proposed project on Roosevelt Drive in Derby, Connecticut.

FCE has proposed construction of an 18.5 MW Fuel Cell facility on the IDA Properties, Inc. site at 200 Roosevelt Drive. This project has the support of our city and we ask that it be approved by your agency.

This project will bring activity to a property that has been vacant for more than ten years and provide sorely needed tax revenue to the City, while having little to no impact on City services. Furthermore a project of this nature, using state-of-the-art technology that emits virtually zero pollutants and low CO<sub>2</sub>, would serve to further cement Derby's "Green Identity" as a state-wide leader for initiatives that support sustainability and benefit the public health.

This project is also consistent with the City's Plan of Conservation and Development. This would complement other green initiatives such as the photo-voltaic field at our former landfill located on Marshall Lane and the conversion of all our street lights to LED bulbs. The municipal parking garage is scheduled and all other municipal buildings are being evaluated for a full LED conversion.

Finally, I wish to note that FCE has met with city staff, and me personally, several times to fully brief us on this project and address any questions we might have. I have found them to be forthcoming and helpful in addressing all of our inquiries. It is for all of these reasons that I wish to clearly convey this city's support for this project and ask for your approval of it. Thank you.

Sincerely,

Richard Dziekan  
Mayor, City of Derby

## **Exhibit C**

### List of Abutters

*See attached.*

Petition of Derby Fuel Cell, LLC  
May 23, 2019  
Exhibit C

**CERTIFICATION**

<b>PARCEL ID</b>	<b>LOCATION</b>	<b>OWNER OF RECORD</b>
9-4-5	ROOSEVELT DR	SHELTON CANAL CO 2874 MAIN ST STRATFORD, CT 06614
9-4 4A	ROOSEVELT DR	UNITED ILLUMINATING CO P O BOX 1402 NEW HAVEN, CT 06505-0902
9-4 3	200 ROOSEVELT DR	IDA PROPERTIES INC P O BOX 284 DERBY, CT 06418
9-4 4B	ROOSEVELT DR	IDA PROPERTIES INC 200 ROOSEVELT DR DERBY, CT 06418
9-4 6	249 251 ROOSEVELT DR	ROOSEVELT DRIVE, LLC 185 PLAINS RD MILFORD, CT 06461
10-3 154	253 ROOSEVELT DR	29 COLONY STREET ANSONIA, LLC P.O. BOX 200 ANSONIA, CT 06401
9-4 7&8	245 247 ROOSEVELT DR	FAIR JAMES A P O BOX 333 DERBY, CT 06418
9-4 3B	200 ROOSEVELT DR	IDA PROPERTIES INC 200 ROOSEVELT DR DERBY, CT 06418
9-4 3A	ROOSEVELT DR	STATE OF CONNECTICUT 80 WASHINGTON ST HARTFORD, CT 06106
9-4 5B	ROOSEVELT DR	CITY OF DERBY 1 ELIZABETH ST DERBY, CT 06418



Petition of Derby Fuel Cell, LLC  
May 23, 2019  
Exhibit C

MUNICIPAL OFFICIAL/AGENCY	NAME/ADDRESS
City of Derby Chief Elected Official	Mayor Richard Dziekan Derby City Hall 1 Elizabeth Street, 2 <sup>nd</sup> Floor Derby, CT 06418 <a href="mailto:rdziekan@derbyct.gov">rdziekan@derbyct.gov</a>
City of Derby Planning & Zoning Commission	Theodore J. Estwan, Chairman Planning & Zoning Commission City of Derby 1 Elizabeth Street Derby, CT 06418
City of Derby Inland Wetlands Commission	Paul M. Dinice, Jr., Acting Chair Inland Wetlands Commission City of Derby 1 Elizabeth Street Derby, CT 06418
City of Derby Building Department	Carlo Sarmiento, Building Official Building Department City of Derby 1 Elizabeth Street Derby, CT 06418 <a href="mailto:csarmiento@derbyct.gov">csarmiento@derbyct.gov</a>
Derby Historical Society	Sarah Riggs Humphreys House 37 Elm Street Ansonia, CT 06401 <a href="mailto:info@derbyhistorical.org">info@derbyhistorical.org</a>
City of Derby Corporation Counsel	Vincent M. Marino, Esq. Corporation Counsel City of Derby Cohen and Wolf, P.C. 1115 Broad Street Bridgeport, CT 06604 <a href="mailto:vmarino@cohenandwolf.com">vmarino@cohenandwolf.com</a>
Naugatuck Valley Council of Governments	Rick Dunne Executive Director Naugatuck Valley Council of Governments 49 Leavenworth Street, 3 <sup>rd</sup> Street Waterbury, CT 06702 <a href="mailto:rdunne@nvcogct.org">rdunne@nvcogct.org</a>
State Senator, District 17	State Senator George S. Logan Legislative Office Building, Room 3400

Petition of Derby Fuel Cell, LLC  
May 23, 2019  
Exhibit C

	Hartford, CT 06106 <a href="mailto:George.Logan@cga.ct.gov">George.Logan@cga.ct.gov</a>
State Representative, District 105	State Representative Nicole Klarides-Ditria Legislative Office Building, Room 4200 300 Capitol Avenue Hartford, CT 06106 <a href="mailto:Nicole.Klarides-Ditria@housegop.ct.gov">Nicole.Klarides-Ditria@housegop.ct.gov</a>
U. S. Senator	Senator Richard Blumenthal 90 State House Square, 10 <sup>th</sup> Floor Hartford, CT 06103
U. S. Senator	Senator Chris Murphy Colt Gateway 120 Huyshope Avenue, Suite 401 Hartford, CT 06106
U. S. Congresswoman, 3rd District	Congresswoman Rosa DeLauro 59 Elm Street New Haven, CT 06510


STATE OFFICIAL AGENCY	NAME/ADDRESS
Connecticut Attorney General	Attorney General William Tong Office of the Attorney General 55 Elm Street Hartford, CT 06106
State Department of Energy of Environmental Protection	Katie Dykes, Commissioner Department of Energy and Environmental Protection 79 Elm Street Hartford, CT 06106-5127 <a href="mailto:katie.dykes@ct.gov">katie.dykes@ct.gov</a>
State Public Utilities Regulatory Authority	John W. Betkoski, III, Vice-Chair Public Utilities Regulatory Authority 10 Franklin Square New Britain, CT 06051 <a href="mailto:john.betkoski@ct.gov">john.betkoski@ct.gov</a>
State Department of Public Health	Dr. Raul Pino, Commissioner Department of Public Health 410 Capitol Avenue P. O. Box 340308 Hartford, CT 06134 <a href="mailto:dph.commissioner@ct.gov">dph.commissioner@ct.gov</a>
State Council on Environmental Quality	Susan D. Merrow, Chair

Petition of Derby Fuel Cell, LLC  
May 23, 2019  
Exhibit C

	Council on Environmental Quality 79 Elm Street Hartford, CT 06106 <a href="mailto:peter.hearn@ct.gov">peter.hearn@ct.gov</a>
State Department of Agriculture	Department of Agriculture 450 Columbus Boulevard, Suite 701 Hartford, CT 06103
Office of Policy and Management	Melissa McCaw, Secretary Office of Policy and Management 450 Capitol Avenue Hartford, CT 06106 <a href="mailto:melissa.mccaw@ct.gov">melissa.mccaw@ct.gov</a>
State Department of Economic and Community Development	David Lehman, Commissioner Department of Economic and Community Development 450 Columbus Boulevard Hartford, CT 06103 <a href="mailto:david.lehman@ct.gov">david.lehman@ct.gov</a>
State Department of Transportation	Joseph Giuliatti, Commissioner Department of Transportation 2800 Berlin Turnpike P. O. Box 317546 Newington, CT 06131-7546
State Department of Emergency Services and Public Protection	James C. Rovella, Commissioner Department of Emergency Services and Public Protection 1111 Country Club Road Middletown, CT 06457 <a href="mailto:james.rovella@ct.gov">james.rovella@ct.gov</a>
State Department of Consumer Protection	Michelle H. Seagull, Commissioner Department of Consumer Protection 450 Columbus Boulevard, Suite 901 Hartford, CT 06103 <a href="mailto:michelle.seagull@ct.gov">michelle.seagull@ct.gov</a>
State Department of Labor	Kurt Westby, Commissioner Department of Labor 200 Folly Brook Boulevard Wethersfield, CT 06109
State Division of Emergency Management & Homeland Security	James C. Rovella, Commissioner Division of Emergency Management & Homeland Security 1111 Country Club Road

Petition of Derby Fuel Cell, LLC  
May 23, 2019  
Exhibit C

	Middletown, CT 06457 <a href="mailto:james.rovella@ct.gov">james.rovella@ct.gov</a>
State Department of Administrative Services	Josh Geballe, Commissioner Department of Administrative Services 450 Columbus Boulevard Hartford, CT 06103 <a href="mailto:josh.geballe@ct.gov">josh.geballe@ct.gov</a>



---

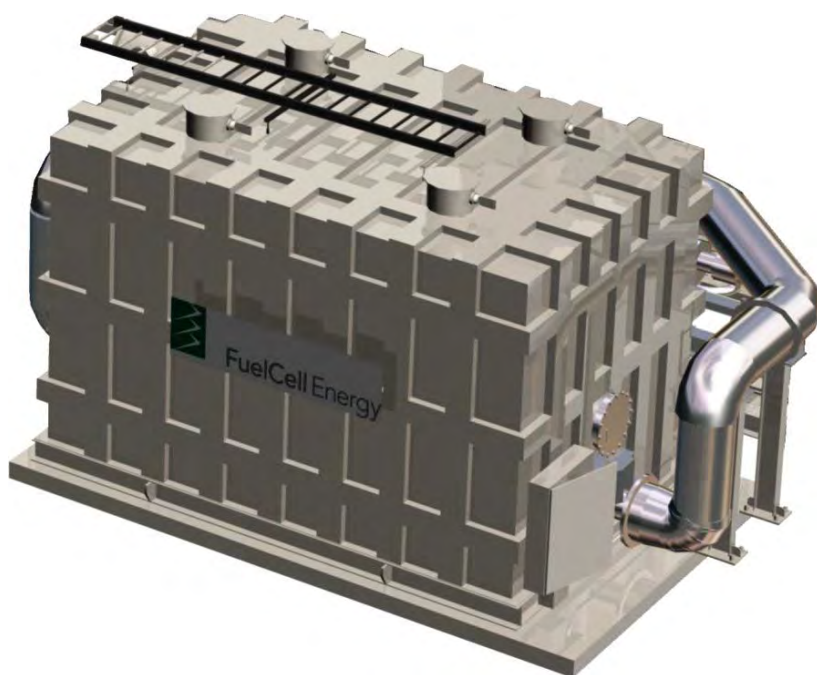
Henry Sire

**Exhibit D**

Facility Sound Assessment

*See attached.*

# Facility Sound Assessment



*Fuel Cell Project*

*200 Roosevelt Drive*

*Derby, Connecticut*

March 18, 2019

Prepared For:

**FuelCell Energy, LLC**  
3 Great Pasture Road  
Danbury, CT 06813



Prepared By:

**Modeling Specialties**  
30 Maple Road  
Westford, MA 01886



## **Environmental Sound Assessment Derby Project**

### **Background**

A Fuel Cell (FC) Project is proposed at an existing industrial parcel between Roosevelt Drive and the Housatonic River in Derby, Connecticut. The Fuel Cell process combines Connecticut Class I Renewable Energy resources, uses proven commercial technologies, is ultra-clean, and is more efficient than any other electricity generating technology in its size range. The proposed equipment configuration is designed and provided by FuelCell Energy, Inc. (“FuelCell Energy”). The following assessment supports a petition to the Connecticut Siting Council as required by fuel cell generators greater than 250 kW. For that reason, the study is based on the standards provided by the Connecticut Department of Energy & Environmental Protection (CDEEP). Sound levels from the proposed equipment were estimated based on vendor design and measured sound from similar equipment configurations. Sound level modeling techniques were used to estimate the potential impacts at receiving locations. What follows is a complete analysis of the facility sound using measured ambient data, detailed proposed equipment configuration and using 3 dimensional noise modeling software package CadnaA by Datakustic.

### **Overview of Project and Site Vicinity**

The Project is located at an existing commercial/industrial property on Roosevelt Drive. Roosevelt Drive is a busy numbered highway (CT-34) with a high volume of truck traffic. It is lined with parcels supporting manufacturing, commercial and electrical generation. The proposed site overlooks the Housatonic River just below the Housatonic Lake Dam. Figure 1 shows an aerial view of the site and surrounding area. Existing sources of sound in the area include traffic along CT-34 and building mechanical equipment.

Some of the industrial properties in the area do not appear to be currently in use. The manufacturing facilities on either side of “B” Street appear to be empty except for stored material. The rear of Bad Sons Beer Company included some mechanical equipment with some venting at the time of the field survey. Closer to “A” Street, there is Bad Sons equipment and an outbuilding where no activity was noted. Field measurements were made in areas absent any local activity. Measurements were also scheduled outside of typical community commuting times. The ambient levels can be expected to be higher when these area facilities are in full operation and with more commuter traffic. In these ways, the study is believed to represent quiet conditions for the area.

The host site is a large open area between an industrial rear lot and an existing substation. The open area currently stores components and equipment. The project will result in the cleaning and raising the current grade by about 6 feet. This will bring the site topography nearer to the level of Canal Road.





Figure 1: Aerial Overview of the Site, Measurement Locations, Receptors and Surrounding Area



## Noise Analysis: Discussion of Analysis Methods

There are a number of ways in which sound (noise) levels are measured and quantified. All of them use the logarithmic decibel (dB) scale. Following is a brief introduction to the noise measurement terminology used in this assessment.

### Noise Metrics

The Sound Level Meter used to measure noise is a standardized instrument.<sup>1</sup> It contains “weighting networks” to adjust the frequency response of the instrument to approximate that of the human ear under various circumstances. One of these is the *A-weighting* network. A-weighted sound levels emphasize the middle frequency sounds and de-emphasize lower and higher frequency sounds; they are reported in decibels designated as “dBA.” Figure 2 illustrates typical sound levels produced by sources that are familiar from everyday experience.

The sounds in our environment usually vary with time so they cannot simply be described with a single number. Two methods are used for describing variable sounds. These are *exceedance levels* and *equivalent levels*. Both are derived from a large number of moment-to-moment A-weighted sound level measurements. Exceedance levels are designated  $L_n$ , where “n” can have any value from 0 to 100 percent. For example:

- ◆  $L_{90}$  is the sound level in dBA exceeded 90 percent of the time during the measurement period. The  $L_{90}$  is close to the lowest sound level observed. It is essentially the same as the *residual* sound level, which is the sound level observed when there are no loud, transient noises.
- ◆  $L_{50}$  is the median sound level; the sound level in dBA exceeded 50 percent of the time during the measurement period.
- ◆  $L_{10}$  is the sound level in dBA exceeded only 10 percent of the time. It is close to the maximum level observed during the measurement period. The  $L_{10}$  is sometimes called the *intrusive* sound level because it is caused by occasional louder noises like those from passing motor vehicles. By using exceedance levels, it is possible to separate prevailing, steady noises ( $L_{90}$ ) from occasional, louder noises ( $L_{10}$ ) in the environment.
- ◆ The *equivalent level* is the level of a hypothetical steady sound that has the same energy as the actual fluctuating sound observed. The equivalent level is designated  $L_{eq}$ , and is also A-weighted. The equivalent level is strongly influenced by occasional loud, intrusive noises.

---

<sup>1</sup> American National Standard Specification for Sound Level Meters, ANSI S1.4-1983, published by the Standards Secretariat of the Acoustical Society of America, Melville, NY.

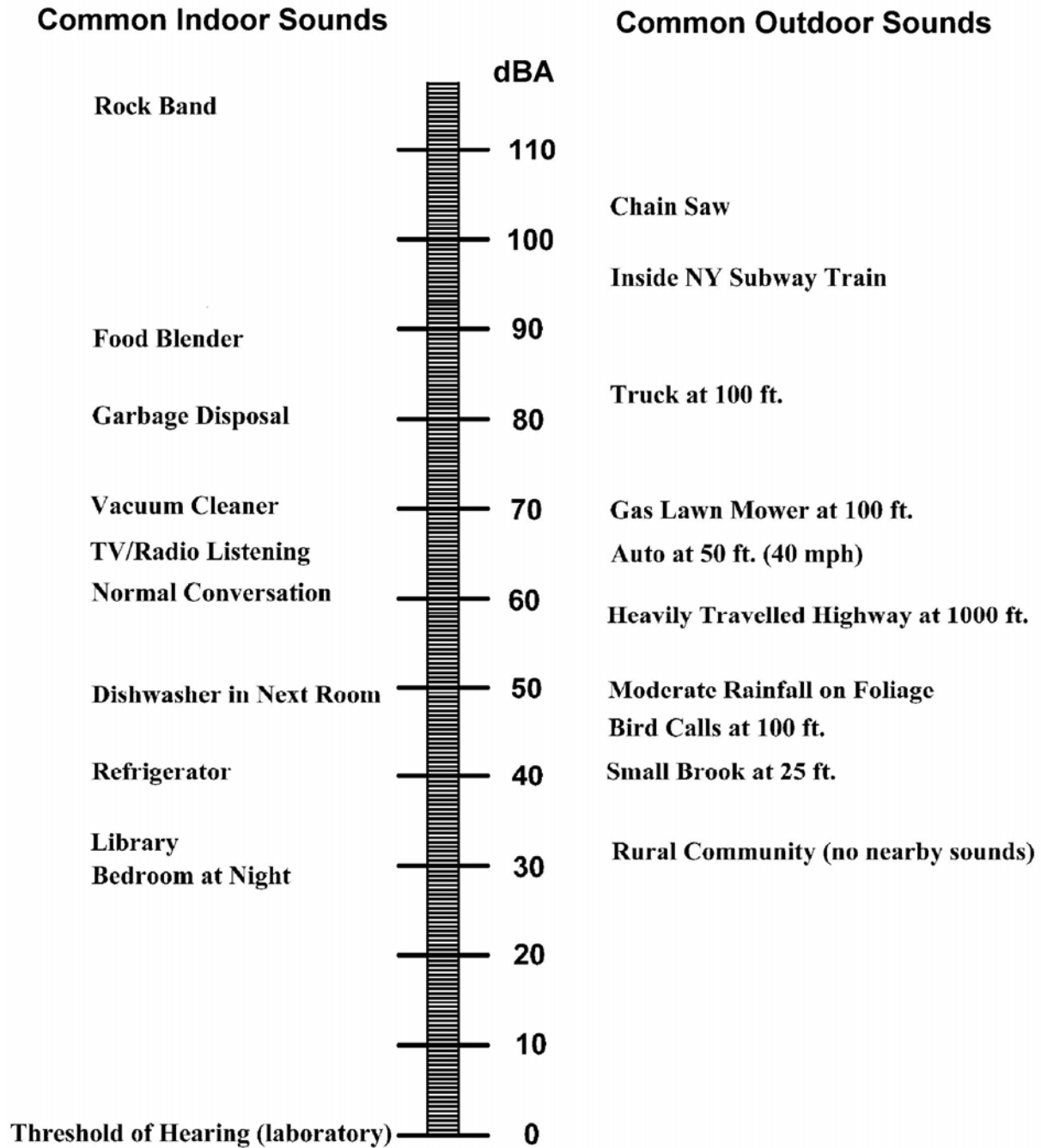


Figure 2: Typical Sound Levels from Everyday Experience

When a steady sound is observed, all of the  $L_n$  and  $L_{eq}$  are equal. This analysis is based on the background or  $L_{90}$  metric. All broadband levels represented in this study are weighted using the A-weighting scale.

In the design of noise control treatments, it is essential to know something about the frequency spectrum of the sound of interest. Noise control treatments do not function like the human ear, so simple A-weighted levels are not useful for noise-control design or the identification of tones. The frequency spectra of sounds are usually stated in terms of *octave band sound pressure levels*, in dB, with the octave frequency bands being those established by standard.<sup>2</sup> The sounds in the community were measured in 1/3 octave band levels. The sounds expected as a result of this project have been evaluated with respect to the octave band sound pressure levels as well as the A-weighted equivalent sound level. For simplicity they are summarized in this report as A-weighted levels.

### ***Noise Regulations and Criteria***

Sound compliance is evaluated on two bases: the extent to which Federal and State regulations or guidelines are met, and the extent to which it is estimated that the community is protected from excessive sound levels. The governmental regulations that may be applicable to sound produced by activities at the Site are summarized below.

- ***Federal***

Occupational noise exposure standards: 29 CFR 1910.95. This regulation restricts the noise exposure of employees at the workplace as referred to in Occupational Safety and Health Administration requirements. The facility will emit only occasional sounds of modest levels, as demonstrated by this study.

- ***State***

The state of Connecticut (Connecticut Department of Energy & Environmental Protection or CDEEP) regulates noise at Regulation Title 22a, Sections 69-1 through 69-7.4, Control of Noise. The project is a Class C (Industrial) emitter. Some properties in the area are zoned commercial or residential and were evaluated as Class B and A Noise Receptors, respectively. An excerpt of the Derby Zoning Map is provided in Figure 3 for the project area. The details of the CDEEP performance criteria are shown in Table 1 based on the source and receiving land uses.

---

<sup>2</sup> American National Standard Specification for Octave, Half-octave and Third-octave Band Filter Sets, ANSI S1.11-1966 (R1975).

Petition of Derby Fuel Cell, LLC  
May 23, 2019  
Exhibit D

Table 1: Connecticut DEEP Noise Standards, by Zoning District

Emitter's Zone	Receptor's Zone			
	Industrial	Commercial	Residential/Day	Residential/Night
Residential	62 dBA	55 dBA	55 dBA	45 dBA
Commercial	62 dBA	62 dBA	55 dBA	45 dBA
Industrial	70 dBA	66 dBA	61 dBA	51 dBA

**Adjustments for high background noise levels or impulse sounds**

1. In those individual cases where the background noise levels caused by sources not subject to these regulations exceed the standards contained in this chapter, a source shall be considered to cause excessive noise if the noise emitted by such source exceeds the background noise levels by five dBA, provided that no source subject to the provisions of this chapter shall emit noise in excess of eighty (80) dBA at any time, and provided that this section does not decrease the permissible levels of other sections of this chapter.
2. No person shall cause or allow the emission of impulse noise in excess of eighty (80) dB peak sound pressure level during the nighttime to any residential noise zone.
3. No person shall cause or allow the emission of impulse noise in excess of one hundred (100) dB peak sound pressure level at any time to any zone.

**Existing Community Sound Levels**

A site survey and noise measurement study were conducted for the facility on March 1, 2019. While the ambient sound typically fluctuates through the day and night, the sound from the proposed facility is expected to be essentially steady. A new source of sound tends to be noticed most during conditions that are otherwise quiet. Because of this, the ambient sound survey was scheduled at a time that represented a quiet condition for the area.

Attended sound level measurements were made using Rion NA-28 sound level meters. The measurements create a baseline community sound level and captured the frequency-specific character of the sound. The meter was mounted on a tripod approximately 5 feet above the ground. The microphone was fitted with factory recommended foam windscreen. The meter was programmed to take measurements for 20 minutes and then store processed statistical levels. The meter meets the requirements of ANSI S1.4 Type 1 – Precision specification for sound level meters. The meter was calibrated in the field using a Larsen Davis Cal-250 acoustical calibrator before and after the sessions. The field calibrations indicated that the meters did not drift during the study. The spectrum analyzer complies with the requirements of the ANSI S1-11 for octave band filters.

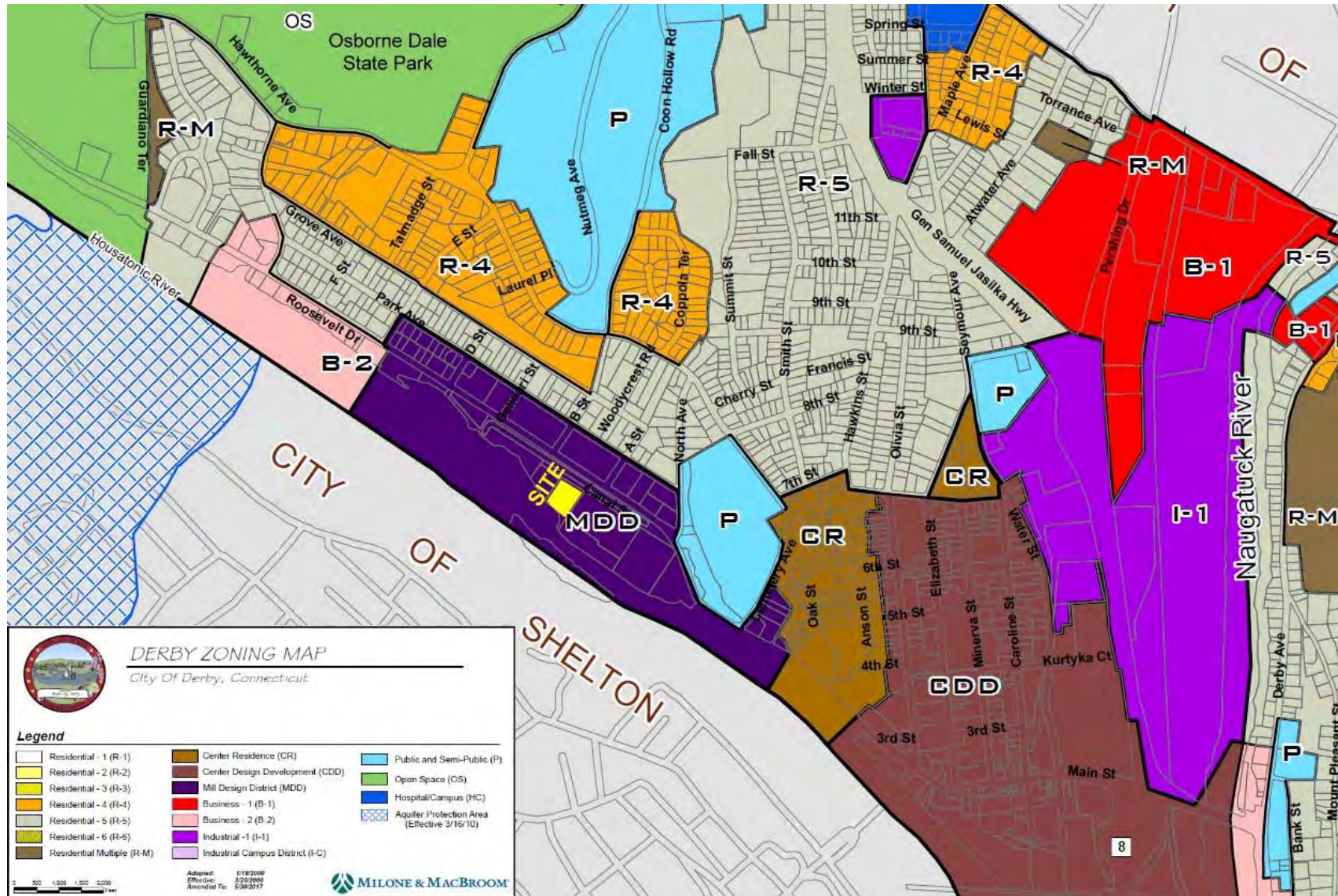


Figure 3: Excerpt from the Derby Zoning Map of the Project Area

The  $L_{90}$  characterizes the background sound level, much like the “residual” which is the level in the absence of any nearby intrusive sources. The sound from short term or infrequent sources is statistically excluded from the  $L_{90}$  samples. Much of the sound measured in the project area is from passing vehicles which momentarily elevate the  $L_{eq}$  levels, but which are screened from the  $L_{90}$  results.

The primary source of sound in the area is from traffic on Roosevelt Drive, (CT-34). It is not only a main thoroughfare, but is also lined with commercial/industrial parcels that can generate truck traffic. The parcels that line CT-34 are in a zone that is designated Mill Design District. A small substation is adjacent to the site to the west. The substation is associated with a power facility beyond it. Further to the west is the Lake Housatonic Dam. While it is near the facility, it did not contribute noticeably to the ambient sounds except during the quietest hours of the night. Bad Sons Beer Company is across Roosevelt Drive to the north of the site. To the east of “A” Street is the Weimann Bros. Manufacturing Company. From the street-side survey, Beyond Weimann brothers to the east are three small units in front of St Vincent de Paul Thrift Shop that have some residential character. They were identified as a modeling receptor, but are handled as commercial use. The facilities to the east are the property host and another facility related to the shipping industry. Across the Housatonic River to the south is the Shelton Riverview Park and Howe Avenue (CT-110). While distant from the proposed equipment, modeling receptors were placed at both the park and the nearest residences beyond Howe Avenue.

### Sources Excluded from the Ambient Survey

During both surveys, the sound field is dominated by traffic on Roosevelt Street (CT-34). Much of the proposed site and its host’s lot are used for storage of equipment and materials. Managing this material requires powered lift equipment to load or carry it around on the site. No lifting or moving of the equipment took place during the survey so it was also screened from the study. The Bad Sons Beer Company includes a bar/restaurant that is presumed to be most active in the evening. The surveys were scheduled to avoid those times.

### Results of the Ambient Survey

The results of the ambient sound level measurements are summarized in Table 2. The community sensitivity is usually based on the lower background levels. Comparing the  $L_{eq}$  levels (including all sounds) to the  $L_{90}$  levels (quietest 10% of samples) illustrates the sound character of the area. Baseline levels are affected by community conditions, meteorology, seasons, insects and traffic patterns. Because the measured levels are dominated by traffic patterns, they can be expected to fluctuate. However, the background levels show that the existing community meets the target levels of the Connecticut DEEP standards.

**Table 2: Ambient Sound Levels Measured on March 1, 2019**

Location	Time	Period	$L_{eq}$	$L_{90}$
Park Ave at Woodycrest (Res)	3:16 AM	Night	44 dBA	38 dBA
A Street	3:40 AM	Night	49 dBA	40 dBA
Park Ave at Woodycrest	11:28 AM	Day	51 dBA	42 dBA
A Street	11:58 AM	Day	54 dBA	45 dBA



Consistent with most residential communities, the daytime is affected by elevated traffic volumes on local and distant roadways. Nighttime levels tend to be lower because of lower traffic volumes and the lack of neighborhood activities.

### **Expected Sounds from the Proposed Installation**

The proposed installation has been designed with significant attention to protecting the community sound environment. Most of the equipment associated with the Fuel Cell facility produces no significant sound. The fuel cell technology does not require many of the heavy mechanical sound sources that are typical of power generation facilities. This analysis represents the most likely sound levels to be expected as a result of the normal operation of the facility using manufacturer's data and measurements of similar equipment at other fuel cell installations.

A computer model was developed for the facility's sound levels based on conservative sound propagation principles prescribed in the acoustics literature. Most of the equipment sources will produce broadband sound of a continuous nature. Each of the potential sources during routine operation of the facility was identified. The sound from each facility-related source is estimated at the source and at the community receptors. The sum of the contributing sources is used to represent the predicted sound level at the modeled location. Identifying specific receiving locations is a key element of the noise modeling since sound levels decrease exponentially with increasing distance. The distances used in this study represent the distance between the nearest source(s) and the nearest representative sensitive property. The results of the modeling show that the steady sound from the proposed equipment will meet the CDEEP standards during the daytime and also the nighttime.

### **Sources of Project Sound**

There are several sources of modest sound at the facility. Under normal conditions, most of those sources will produce consistent sound through the day and night. Several sources will cycle on and off as required by the facility operation. The electrical equipment is equipped with a supplemental chiller which will provide necessary cooling using variable speed fans. There is also a cooling unit on the Water Processing Skid that provides cooling when needed. But in this conservative study, all sources are analyzed as continuous full-time sources.

The fuel cell equipment is manufactured in Connecticut by FuelCell Energy, Inc. The design of this facility is based on five (5) SureSource 3000 blocks of fuel cell equipment. Each block will be similar to the graphic overview shown in Figure 4. The entire proposed facility is shown in the layout drawing in Figure 5. Much of the equipment is acoustically inert such as the water treatment enclosure, fuel de-sulfurizing units and nitrogen system. Other equipment produces some sound that can only be distinguished in the near field of the equipment like most of the electrical equipment, transformers and even the fuel cell modules. The primary source of equipment sound is from the fresh air blower and the piping that delivers air and fuel to the modules. By the time the air has moved through the process and is gathered in the exhaust system, it has a steady air movement sound, and has lost any blower sound character.

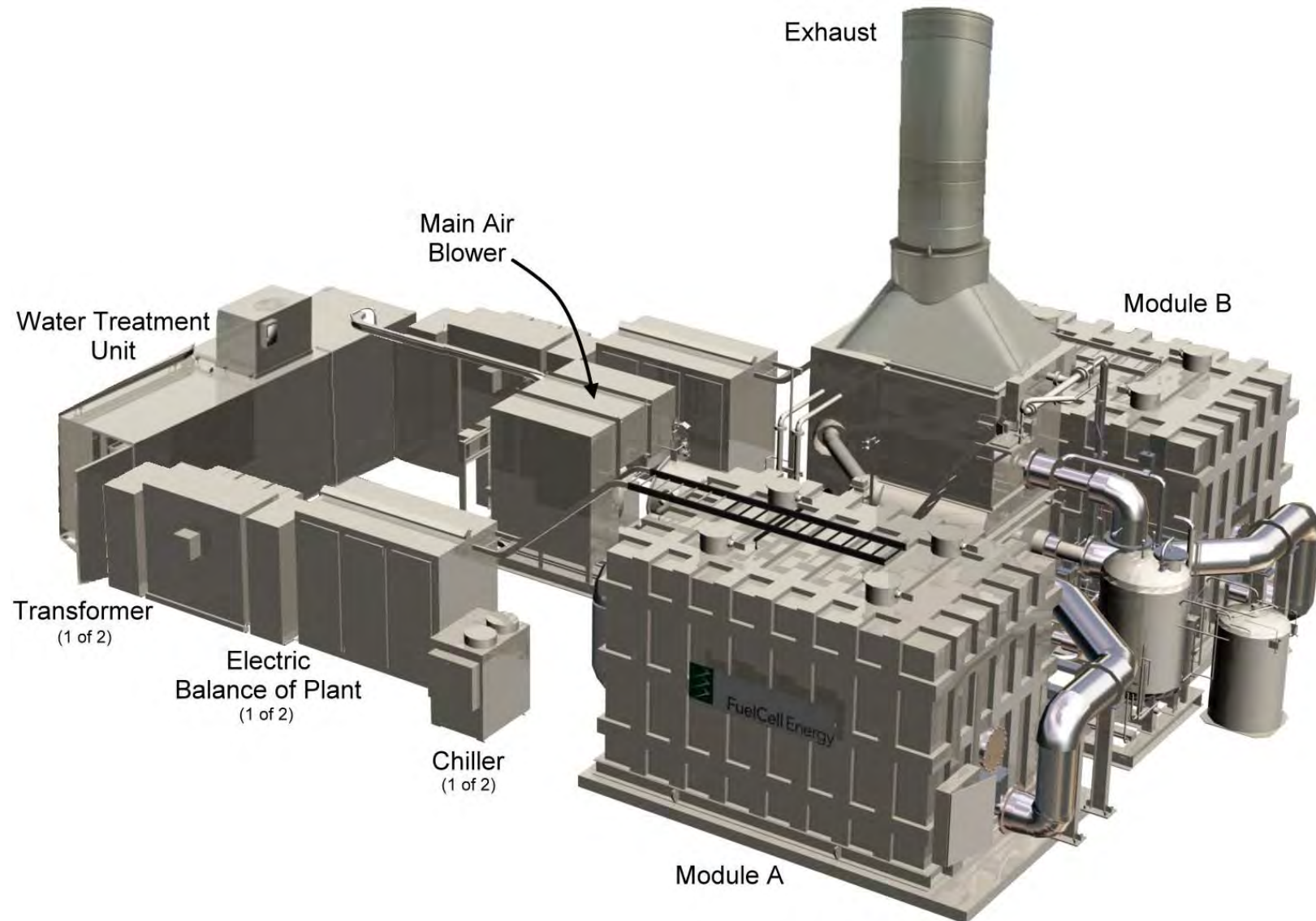


Figure 4: **Layout of Typical Equipment Components of each SureSource 3000 Block**



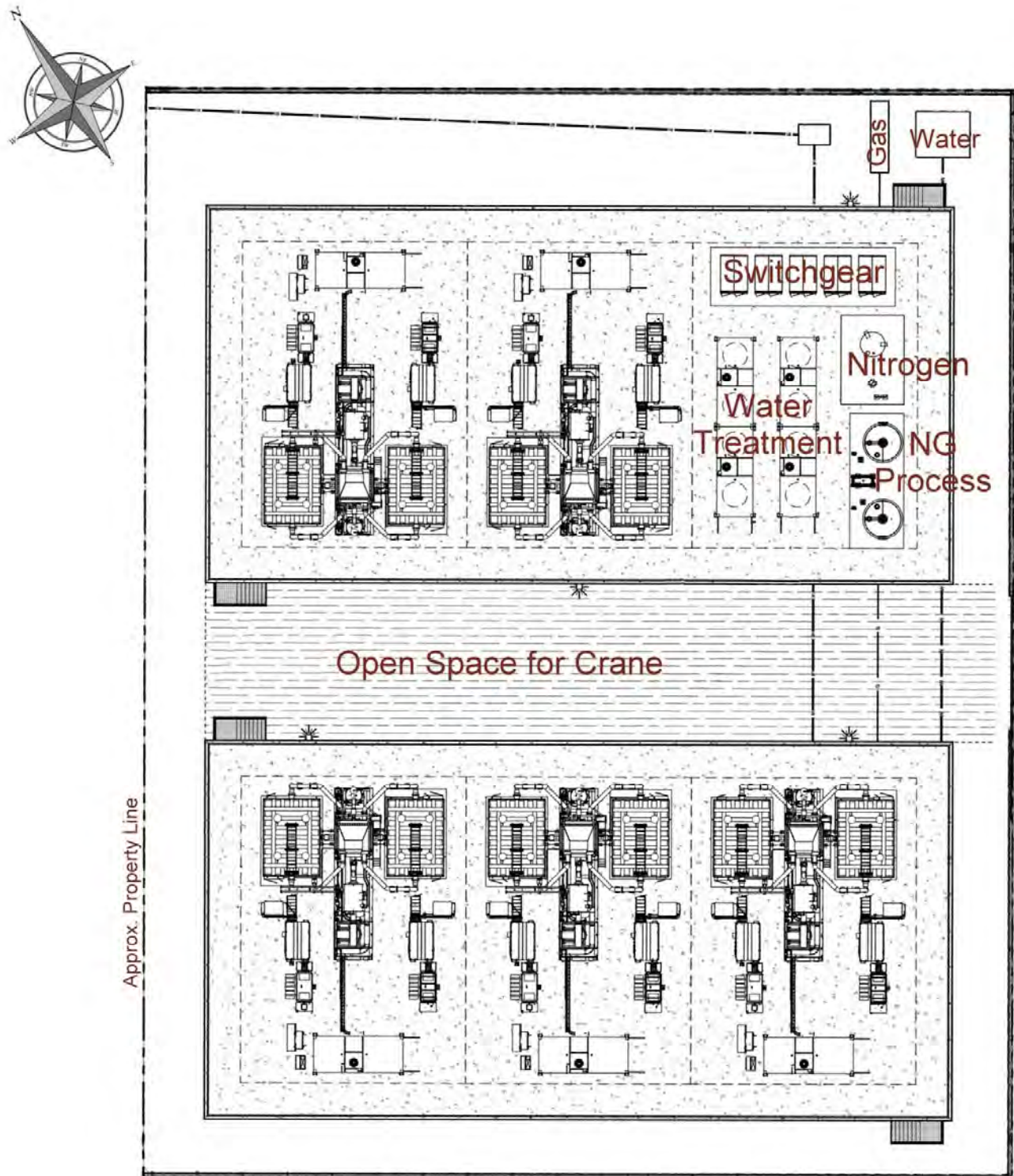


Figure 5: Layout of the Fuel Cell Facility Showing 5 Units and Major Groups of Equipment

The analysis of sound is based on the contributions of individual sources and propagation losses to the analyzed receptors in general directions from the facility. The modeling accounts for the worst case equipment sound under quiet ambient conditions consistent with the regulatory criteria. Results of the modeling are shown in Table 3 and are provided in graphic form in Figure 6. The model accounts for the shielding that is provided by buildings to the northwest and east of the equipment, which will shield some receptors in the area. The residential receptors to the north are slightly elevated, which was accounted for in this conservative analysis.

**Table 3: Summary of Noise Modeling Results**

Receptor	Distance (ft)	Project Sound (dBA)	Criterion (dBA)
Residential, North1	670	42	61/51
Residential, North2	570	49	61/51
Residential, North3	650	48	61/51
Commercial, North	205	55	66
Commercial, East	575	45	66
Industrial, E	580	44	70
Open Space, South	1000	42	61/51
Residential, South1	1140	39	61/51
Residential, South2	1135	40	61/51

### **Mitigation Measures**

The proposed fuel cell equipment is inherently quiet compared to other forms of electrical generation. The Main Air Blowers are configured with an engineered partial enclosure to limit the sound from its primary sources (fresh air blower and outlet). This package also includes lagging on some of the pipes that would otherwise emit sound from gas flow. The most significant sources within the DFC package have been acoustically treated at their source. In addition, the proposed industrial setting allows a buffer of distance that effectively reduces the sound at sensitive land uses.

### **Conclusions**

The proposed fuel cell equipment package inherently lacks the heavy mechanical equipment that is commonly associated with electrical generation. There will be several sources of modest sound such as blowers, pumps, condenser and fans. The size of the equipment and character of the sound is more typical of commercial building mechanical equipment than of typical electrical generating sources. Mitigation measures are engineered into the equipment configuration to keep the cumulative sound from the Fuel Cell facility within the applicable standards.

The ambient baseline was established by measurements that exclude short term ambient sounds (like cars & trucks) so it represents quiet conditions for the area. The potential sources of sound at the facility were identified and quantified. Sound level modeling techniques were employed to estimate the sound levels at the nearest receptor locations of varied land uses. The results of the modeling indicate that the facility levels will meet the CDEEP noise criteria at all nearby receptors.





Figure 6: Graphical Summary of the Predicted Facility Sound Levels at Receptor Locations

**Exhibit E**

Emergency Response Plan

*See attached.*



# EMERGENCY RESPONSE/SAFETY PLAN

Prepared for:

**Derby Fuel Cell Project** (MM-45, 46, 47, 48, 49)

Located at:

200 Roosevelt Drive  
Derby, CT 06418

Owned by:

**Derby Fuel Cell, LLC**

c/o: FuelCell Energy, Inc.  
3 Great Pasture Road  
Danbury, CT 06810

Prepared by:

**FuelCell Energy, Inc.**

3 Great Pasture Road  
Danbury, CT 06810

*Prepared: April, 2019*

***A current copy of this Plan is to remain in an accessible location on-site at all times***

## Plan Contents

1	INTRODUCTION.....	1
	<b>General.....</b>	<b>1</b>
	<b>Table 1: Plant Descriptions .....</b>	<b>2</b>
2	EMERGENCY RESPONSE / SAFETY – PLANS .....	3
	<b>2.1 Emergency Action Plan .....</b>	<b>4</b>
	<b>2.2 Fire Emergency and Prevention Plan .....</b>	<b>11</b>
	<b>2.3 Plant/Project Safety Plan .....</b>	<b>22</b>
3	SITE SECURITY & ACCESS .....	28
4	EMERGENCY RESPONDER / LOCAL COMMUNITY COORDINATION & NOTIFICATION SYSTEM.....	29

## Appendices

Appendix A: Plant Layout with Exit Pathways / Rally Area and Utility Shutoffs

Appendix B: Plant Hazardous Area Classification Drawings with ESD pushbutton &  
Emergency Sensor Locations

# 1 INTRODUCTION

The Derby Fuel Cell Project is a fuel cell power plant whose equipment is owned by Derby Fuel Cell, LLC, a wholly-owned subsidiary of FuelCell Energy, Inc. ("FCE"). The plant is situated on a previously undeveloped area of a manufacturing facility lot, adjacent to an existing electrical substation, located between Roosevelt Drive and the east bank of the Housatonic River in Derby, Connecticut. Five fuel cell plants and appurtenant equipment will be constructed on two pile-supported concrete pads, raised above maximum flood elevation. The power generated from the facility will be fed into the electric distribution grid through an interconnection at the adjacent substation. The facility will be operated under a service agreement by FCE. The net generating capacity of the five fuel cell power plants is 14.0 MW, nominal. This Emergency Response / Safety Plan has been prepared as required by the Occupational Safety and Health Administration (OSHA) general industry standard at 29 CFR 1910.38. The Fire Prevention & Emergency Plan has been prepared in accordance with the requirements of the National Fire Protection Agency Standard 853.

## ***General***

FCE SureSource fuel cell plants are designed and operated as unmanned power generation facilities. The control system for the plant is designed for the system to "fail safe" in the event of a process upset. For any event or upset condition that has a potential safety consequence, the plant control system initiates an emergency shutdown ("ESD") sequence that isolates the external fuel source from the plant and trips the fuel cell inverters off the interconnected power grid.

A SureSource plant Emergency Shut Down event isolates the natural gas fuel supply from the plant through the use of dual, fast-acting, spring-loaded block valves located at the plant fuel gas supply connection. An ESD event also triggers automatic isolation of the fuel desulfurizer vessels and initiates the purging of the downstream fuel train components through the module using the onsite supply of inert nitrogen gas. Purging the residual fuel train contents out through the module results in the fuel being oxidized to innocuous end products. An ESD event also results in the fuel cell module(s) and inverter(s) being disconnected from the electric utility grid. Process upset or equipment operation malfunctions that can only cause equipment damage but no possible safety consequences can result in the fuel cell plant switching off the electric grid while remaining operational (islanding) so as to allow time for the electric grid or the fuel cell plant to stabilize, prior to resynchronizing with the grid. During any of these types of events, operators at FCE's 24/7/365-manned Global Monitoring and Control Center ("GMCC"), will immediately assess the operational condition of the plant and take appropriate actions to stabilize or recover the plant to operational status, whichever is appropriate for the situation. If any on-site response is appropriate for the situation, the GMCC operator will contact appropriate personnel, be they an FCE field service technician, or in the very unlikely event of a developing emergency response situation, local emergency response personnel.

Following, in Table 1, is an outline description of the fuel cell plant and other site equipment included in this project.

## ***Table 1: Plant Descriptions***

### **Plant Model: SureSource 3000 ESU**

Each SureSource 3000 ESU plant consists of two (2) SureSource fuel cell modules, a Mechanical Balance-of-Plant (MBOP – skids 1 & 2), and an Electrical Balance of Plant (EBOP – consisting of (2) power conditioning units (PCU)/inverters, (2) chiller units, (2) EBOP transformers and an MBOP transformer). The project site will also store water and fuel gas treatment and nitrogen supply equipment in addition to electric utility interconnection switchgear and instrumentation.

<b>Number of Fuel Cell Plants:</b>	<b>5 (Plant S/Ns: MM-45, -46, -47, -48 &amp; -49)</b>
<b>Fuel Cell Power Output:</b>	<b>2.8 MW ea, nominal. 14.0 MW total for 5 plants</b>
<b>Installation Location:</b>	<b>Outdoors</b>
<b>Fuel type:</b>	<b>Pipeline Natural Gas</b> Utility supply pressure: 20-25 psig to site desulfurizers Fuel cell plant reduced operating pressure: <15psig
<b>Plant Output Voltage:</b>	<b>13.8 KV / 3 Phase / 60 Hz</b>
<b>EBOP Manufacturer:</b>	<b>Rockwell</b>
<b>EBOP Transformer Type / Dielectric Fluid:</b>	<b>Air-Cooled / none (Dry Type)</b>
<b>MBOP Transformer Type / Dielectric Fluid:</b>	<b>Oil Cooled / FR3 less-flammable, seed oil based dielectric fluid (total qty. = 938 gal.)</b>

### **Additional Appurtenant Equipment**

<b>Fuel Cleanup Equipment:</b>	<b>(2) natural gas desulfurizer vessels (8'- 0" O.D. x 15' SS)</b>
<b>Water Treatment System:</b>	<b>(1) 35 gpm dual-pass Reverse Osmosis/Electro-deionization system, incl. chemical pre-conditioning, multimedia prefilter &amp; product water storage tanks, all installed inside two (2) shipping container enclosures.</b>
<b>Nitrogen Supply:</b>	<b>(1) bulk liquid nitrogen tank (3000 gal liquid capacity)</b>
<b>Ancillary Heat Recovery Equipment:</b>	<b>None</b>
<b>Project Equipment not in FCE scope:</b>	<b>None</b>
<b>SITE COORDINATES:</b>	<b>Latitude: 41.325000° North</b> <b>Longitude: 73.099167° West</b>

Equipment not described above is not covered by this plan.



## **2 EMERGENCY RESPONSE / SAFETY – PLANS**

Employers are required by the Occupational Safety and Health Administration (“OSHA”) Standard at 29 CFR 1910.38 to have a written Emergency Action Plan (“EAP”) for workplaces. The EAP can serve to fulfill the requirements of an Emergency Response Plan when the plan for emergency response activities is to evacuate the premises and to allow professional emergency responders to perform the required emergency response activities. Due to the nature of FCE SureSource fuel cell power plants being unmanned, remotely operated, and fail-safe in operational philosophy and control, it is the practice and policy of FCE to instruct workers, through a workplace EAP, to evacuate the premises in emergency situations and to summon professional emergency responders to perform required emergency response activities.

NFPA 853 is the national standard for the installation of Stationary Fuel Cell Power Systems and requires the preparation of a written Fire Prevention and Emergency Plan for fuel cell installations. The Fire Prevention and Emergency Plan is to be prepared in accordance with the requirements of Section 8.2 of NFPA 853 and is to include descriptions of fire prevention procedures, inspections, housekeeping practices, flammable material storage, control of ignition sources, procedures for fire protection equipment impairment, fire emergency plans and other information.

The OSHA standards for General Industry (Part 1910) and Construction (Part 1926) at Title 29 of the Code of Federal Regulations require that employers comply with a host of health and safety standards. Such requirements are outlined in employer safety programs and policies. Summary statements of corporate health and safety policies are often prepared for employee quick reference on an individual plant or project-specific basis.

Copies of the Emergency Action Plan, Fire Prevention & Emergency Plan and Plant/Project Safety Plan for the Derby Fuel Cell Project follow.

## **2.1            *Emergency Action Plan***

The following is the Emergency Action Plan (EAP) for the subject plant. As the plant is at the start of construction, this EAP will serve as both a construction phase and an operation phase document. If required, it will be updated again as necessary to appropriately reflect specific site conditions and limitations at final project completion.

Site Name:     **Derby Fuel Cell Project**

Site Address: **200 Roosevelt Drive  
Derby, CT 06418**

Plant Operator: FuelCell Energy, Inc.  
3 Great Pasture Road  
Danbury, CT 06810

Plant Owner: Derby Fuel Cell, LLC  
3 Great Pasture Road  
Danbury, CT 06810

### **A.   *Emergency Plan Coordinator & Other Contacts***

#### **Emergency Plan Coordinator –**

Name:           **Global Monitoring and Control Center (GMCC)**  
Company:       FuelCell Energy, Inc.  
Description:     24 hour / 365 day Plant Monitoring  
Telephone No:   **(800) 326-3052**

#### **Additional Contact information –**

**Site Operator Contacts:** *(NOTE: private telephone numbers have been redacted from public report to protect privacy)*

Name:           Valerie Hoffman  
Co./Dept./Title: FCE / Field Service / Field Service Manager  
Telephone No:   (203) 825-6071 (FCE)  
                      REDACTED     (work cell)

Name:           Chris McCarthy  
Co./Dept./Title: FCE / Field Service / Director of Field Operations  
Telephone No:   (203) 205-2054 (FCE)

REDACTED (Cell)

Name: Mark Benedict  
Co./Dept./Title: FCE / Process Engineering /Principal Engineer, Product EHS  
Telephone No: (203) 830-7429 (FCE)  
REDACTED (Cell)

Name: Joe Ulevicus  
Co./Dept. /Title: FCE / Sr. Manager, Environmental, Health and Safety  
Telephone No: (860) 496-2273 (FCE)  
REDACTED (Cell)

**Additional Owner Contact:**

Name: RESERVED  
Co. /Dept: RESERVED  
Telephone No: (XXX) XXX-XXXX (Office); (XXX) XXX-XXXX (Cell)

**Additional Site Contacts:**

Name:	RESERVED	RESERVED
Co. /Dept:	RESERVED	RESERVED
Telephone No:	(XXX) XXX-XXXX	(XXX) XXX-XXXX

**Site Utility Contacts:**

Company: **Natural Gas – Eversource**  
Name/Dept./Title: Gas Leak Emergency Line (CT)  
Telephone No: (877) 944-5325 (or 9-1-1)

Company: **Electric Power – United Illuminating**  
Name/Dept./Title: Emergency Number  
Telephone No: (800) 722-5584 (or 9-1-1)

Company: **Water Service – Regional Water Authority**  
Name/Dept./Title: Water Emergency Number  
Telephone No: (203) 562-4020

Company: **Sewer Service – Derby Water Pollution Control Authority**  
Name/Dept./Title: Derby WPCA Emergency Number  
Telephone No: (203) 736-1475

Company: **Airgas (Nitrogen)**  
Name/Dept /Title: Mike Gieralt / Bulk Gas Manager/Southern New England

Petition of Derby Fuel Cell, LLC  
May 23, 2019  
Exhibit E

Telephone No: (203) 258-2616 (cell)  
(800) 242-0105 (24/7 Technical Service and Bulk Deliveries)



**Government Official Contacts:**

*(Note: Government officials are only to be contacted by designated FCE personnel, per established FCE policy/procedure, described later in this Plan)*

***City of Derby –***

City Manager – Richard Dziekan; (203) 736-1450

Fire, Police, Ambulance Dispatch ([local] Emergency dispatch) – 9-1-1

Police, non-emergency – (203) 735-7811

Fire Dept., non-emergency – (203) 732-1963

***State Legislators – Derby, CT***

Assembly Representative – Kara Rochelle (District 104); (800) 842-8267; (860) 240-8585

State Senator – George S. Logan (District S17); (800) 842-1421; (860) 240-0558

**Private Residences/Establishments requesting notification of emergency response incidents (per formal request):**

Neighboring Resident or Establishment Name	Neighbor Street Address	Contact Information – Phone and/or email
<i>none</i>		

**B. Preferred Means of Reporting Emergencies**

*GMCC is to contact local Emergency Responders in accordance with this Plan, if required, or when requested to do so by on-site personnel.*

Emergency	Make Initial Notification to:
Fire / Explosion	<b>(203) 732-1963</b> <small>(verified 04/22/19 - mab)</small> (for calls originating from other than on-site) <b>9-1-1</b> (for calls originating on-site only)
Flammable/Hazardous Material Release	
Medical Emergency	
Threat / Violence	
Severe Weather	Coordinate with FuelCell Energy GMCC (800) 326-3052

**GMCC is to then contact a FCE Field Service Management representative and then make any additional utility / owner / community resident contacts as directed to by FCE F.S. Management representative.**

### **C. Emergency Action Plan Elements**

- **Emergency Escape Procedures and Routes**

Emergency escape routes, exits and rally areas are depicted in the Plant Layout drawing provided in Appendix A.

Upon discovery of the need for an evacuation (either self-initiated or in response to an evacuation call), all personnel on site shall immediately proceed to the nearest safe site exit and then proceed immediately to the designated rally area. Non-FCE contractors and guests shall be escorted by their host FCE employee to the nearest safe exit. The FCE standard lock combination is known by operating /maintenance personnel for any exits that may be secured at times when the plant is occupied.

In the course of evacuation, ***a call shall immediately be placed to GMCC with a request/instruction for the second GMCC operator to immediately call local Emergency Responders*** (See *Emergency Action Plan, Section B*) to initiate action by the local emergency response organization(s). The caller is to stay on the line and provide all information requested, including name, location and nature of emergency and additional contact information, as may be requested.

With the exception of small 'incidental' spills (as defined by OSHA and per FCE employee training), FCE employees are not to perform chemical spill response activities. Emergency or private spill response contractors are to be retained for the cleanup of non-incidental spills.

**All releases of ANY material are to be reported** to the FCE Product EHS Principal Engineer and to the FCE EHS department as soon as practical.

- **Procedures for Employees who Remain to Operate Critical Operations Before Escape**

All employees are expected to proceed immediately to the designated primary or backup rally location during any call for site evacuation.

- **Employee Accountability Procedures after Evacuation**

The Derby Fuel Cell Project is a normally unmanned site; however, one or several FCE, owner or visiting personnel may be present on site at any time to perform operating, maintenance or other tasks. Per established site work/visitation procedure, all FCE and other personnel present on-site will be known by both the senior FCE Field Service employee present at the site as well as by the off-site GMCC operator. Upon the implementation of an evacuation, cell phone contact is to be established

immediately with GMCC to update or confirm the list of on-site personnel. Accounting of all on-site personnel is to then be made at the rally area, or backup rally area, wherever the situation dictates that assembly occur.

- **Rescue and Medical Duties**

FCE employees are not routinely provided with rescue or in-depth medical training, and as such are not required or expected to perform rescue or medical duties. FCE employees are NOT to reenter the site following an evacuation prior to an 'all-clear' call being made from the professional first responder person in charge.

- **Alarm System**

FCE plants are normally unmanned sites, with only a small number of workers present on site at any given time. Typically one, sometimes two, and on rare occasions more than two workers are present on site when work is being performed. When multiple workers are on site, they will typically be working together.

***The employee alarm system** to be used at the Derby Fuel Cell Project site is direct voice communication. The OSHA standard for employee alarm systems at 29 CFR 1910.165 allows the use of direct voice communication as an acceptable procedure for sounding an alarm system for workplaces of 10 or fewer employees, provided all employees can hear the alarm.*

Upon discovery of a situation requiring evacuation, the discovering employee shall directly communicate the evacuation requirement to his/her fellow employees. Any non-employee guests on-site will be escorted by their host employee to the nearest clear exit at that time. It is envisioned that all employees present on site at any time will be capable of hearing a call for evacuation under foreseeable circumstances.

- **Training**

All employees and contractors working at, and visitors to, FCE fuel cell power plants are to be trained in the elements, policies and procedures of this Emergency Action Plan prior to, or at the time of their first visit. All persons present at FCE plant sites are expected to comply with all elements of this plan in emergency situations.

#### **D. Emergency ShutDown (ESD) Procedures**

ESD Pushbuttons located throughout the site can be used to shut down the operation of site equipment.

**1. Site Electrical Disconnect pushbutton:** The following ESD pushbutton will ***both disconnect the fuel cell plant and open the plant utility grid Tie-Breaker:***

- 1 on the EBOP Tie Breaker Switchgear (HS-300E)

Note that some Mechanical-Balance-of-Plant and Electrical-Balance-of-Plant devices are also UPS (uninterruptable power supply) powered, so some low voltage equipment may temporarily remain energized even after opening a Tie-Breaker Disconnect or depressing an ESD pushbutton. **Note also that a hot fuel cell module may contain hazardous voltage, even when not operating.**

**2. Fuel Cell ESD pushbuttons:** The following ESD pushbuttons will stop the operation of the fuel cell plant equipment:

- 1 pushbutton on the control panel on the fresh air blower end of Skid 2 (HS-300A)
- 1 pushbutton on the preconverter end corner of Skid 2 (HS-300B)
- 1 pushbutton on each of the EBOP PCUs (HS-300F & HS-300G)

***NOTE: Some Mechanical-Balance-of-Plant equipment and Electrical-Balance-of-Plant switchgear, PCU and transformer equipment may remain energized even after depressing one of these ESD pushbuttons.*** Note also that a hot fuel cell module may contain hazardous voltage, even when not operating.

The locations of the plant ESD pushbuttons are depicted in the drawings in Appendix B.

**E. Special Training**

FuelCell Energy personnel who work at fuel cell plants receive Hazcomm training in the chemical hazards that are present on site. Operating personnel also receive training in other occupational safety and health (OSHA) standards, as appropriate for the tasks to which they are assigned.

**F. Personnel Accounting Following Evacuation**

In order to be accounted for, all personnel present on site at the time of an evacuation are to proceed to the designated rally area, depicted on the drawing in Appendix A. Contact will be made with GMCC and the ranking supervisor on site will determine if all personnel are accounted for or if any personnel are missing. The results of the accounting determination will be reported to the professional first responder in charge of the emergency response.

**G. Rescue and Medical Duties**

All rescue and medical duties required at any FCE fuel cell plant will be performed by professional emergency response personnel.



## **2.2      *Fire Emergency and Prevention Plan***

The following is the Fire Emergency and Prevention Plan for the subject plant. As the plant has not been constructed to date, this Fire Emergency and Prevention Plan will be updated as necessary to appropriately reflect specific site conditions and limitations, as FCE becomes aware and construction is completed.

### **Fire Emergency Plan**

#### **Purpose:**

This document provides information specific to FCE's SureSource fuel cell power plant, as described in the Plant Description section earlier in this Plan (Table 1). The document has been prepared in accordance with the requirements of Section 8.2 of NFPA 853-2015.

#### **A. Response to Fire or Other Emergency Condition**

- **Overview of fire hazards present**

The aboveground gas meter that supplies the fuel cell site is complete with manual emergency shutoff valves and is located on the fuel gas utility supply fuel train located at grade level just south of the north elevated equipment pad. Natural gas (odorized) at a nominal pressure of 20 psig is supplied to the fuel cell desulfurizers via an aboveground pipe within the fenced enclosure. After the desulfurizers, the fuel cell plants then reduce the fuel gas pressure to less than 15 psig and direct the gas flow into the fuel cells. The host site security fence surrounding the entire fuel cell park provides security for all of the fuel cell plants and the gas utility fuel supply train.

***Natural gas is de-odorized*** by flowing through the two desulfurizer vessels serving the entire site (5 fuel cell plants.) The desulfurizer vessels are each equipped with a pressure safety relief valve (PSV), sized for both a failed upstream pressure reducing valve and a fire exposure condition. The PSVs discharge to a vent termination approximately 30' above grade over the desulfurizer vessels. Any flow through a PSV is immediately detected by an in-line flow sensor, which in turn immediately initiates a plant ESD. De-odorized fuel flows through the fuel cell power plant equipment, including the fuel humidifiers and the preconverters, before entering into the fuel cell modules. The air heaters also operate on an intermittent basis on de-odorized fuel. All fuel gas is confined within code-complying process piping and vessels. All fuel sample valve taps are small bore and "double blocked" by virtue of tethered caps.

The fuel cell power plant operates at high internal temperatures. Temperatures inside the insulated fuel cell module are approximately 1200°F and the fuel fired air heater also operates at temperatures of up to 1200°F. The fuel humidifier and connecting

pipes also operate at high temperature. Insulation or guards are provided to maintain equipment external surfaces at touch-safe temperatures.

Ancillary pieces of electrical equipment are provided with or are appurtenant to the fuel cell power plant. Some electrical equipment may operate at high current and/or medium voltage (>500V) and therefore generate appreciable heat. All electrical equipment are designed to applicable codes, including provisions for adequate heat dissipation.

- **Notifications and coordination**

Upon discovery of a fire or other emergency condition, or acknowledgement of a fire alarm associated with the fuel cell power plant, the discovering or acknowledging person shall make notifications to the appropriate persons as outlined in the site Emergency Action Plan.

An on-site discovering person who is trained in the operation and maintenance of the fuel cell power plant and who has evacuated the site for an emergency situation shall remain stationed in proximity to the site and accessible to emergency responders throughout the emergency response time frame in order to assist and support responders with technical expertise as they may request or require.

An on-site discovering person who is a representative of the plant/facility owner shall remain on-site throughout the emergency response time frame to assist and support responders with plant/facility owner information and resources, including access to required resources and traffic control as emergency responders may request or require.

- **Plant security**

Public access to the fuel cell equipment is restricted by locked, restricted access fencing.

- **Evacuation and restriction of non-response personnel**

Upon discovery of a fire or other emergency condition associated with the fuel cell power plant, the plant area shall be immediately evacuated of all non-response personnel to a minimum distance of 100 feet. Plant host facility representatives and qualified plant operating personnel shall identify themselves to Emergency Response personnel and remain nearby and available to assist in response activity support, as necessary. Notifications of nearby residents as required by the Emergency Response Person in Charge, shall be undertaken as directed, per the EAP.

- **Operator activities**

On-site personnel:

- Upon discovery of a fire or other plant emergency condition with the plant still running, while immediately evacuating the area of self and others, depress any Emergency ShutDown (ESD) pushbutton, if it is safe to do so. ESD buttons are situated at several locations around the plant as indicated in Appendix A and Appendix B, and as can be identified by their red mushroom caps and labeling, as depicted in photos later in this plan.
- Upon discovery of a fire or other emergency condition with a plant that has experienced an Emergency ShutDown (ESD), immediately evacuate others and self.
- Contact GMCC and instruct GMCC to in turn contact local Emergency Responders. As an emergency situation, advise GMCC to make other required notifications to management personnel, owner, and others, per Emergency Action Plan.
- Remain on-site at a safe distance to assist and support responding personnel, including providing plant access, restricting access of non-responding personnel, or controlling traffic.

Remote GMCC (Global Monitoring and Control Center) operators:

- Upon advisement or acknowledgement of a *fire-related* Emergency Shutdown or knowledge of other emergency condition, make Emergency Responder and all other required notifications as described in Emergency Action Plan.
- If not already present, dispatch field service personnel to the site to assist and support response personnel with fuel cell technical expertise.

**B. Fire Extinguishment / Emergency Plant Shutdown**

- **Fire water application concerns**

**FIRE WATER SHALL NOT BE APPLIED TO COMPONENTS OF THE FUEL CELL POWER PLANT AT ANY TIME.** Certain fuel cell components may remain electrically energized with either alternating current or direct current voltage even after a system shutdown via one of the Emergency ShutDown (ESD) pushbutton switches.

- **Appropriate extinguishing media**

Only fire extinguishing medias appropriate for live electrical equipment shall be applied to fuel cell power plant components. Only listed fire extinguishers for Class A:B:C type fires are provided inside the plant enclosed area.

Upon Emergency ShutDown (ESD) of the fuel cell power plant, all fuel supplies to the plant are automatically shut off via two in-line fast-acting spring-loaded isolation valves.

Following an ESD, **ELECTRICAL ISOLATION IS NOT ASSURED**. Substantial AC and/or DC voltages may remain for a significant time following an Emergency ShutDown event.

**FOLLOWING AN ESD SOME NATURAL GAS WILL REMAIN ISOLATED WITHIN THE FUEL DESULFURIZER VESSELS**, however, these vessels are protected from overpressurization by pressure safety valves sized for fire exposure conditions. Following an ESD, nitrogen gas supplied from an on-site liquid source will flow through the fuel cell plant equipment. As with the desulfurizers, the nitrogen source supply is protected against overpressurization by a safety relief valve provided by the gas supplier.

A Plant Layout drawing is provided in Appendix A. The locations of key utility shutoffs (fuel gas, electricity) are indicated on the layout drawing.

- **Other Emergencies**

Hazardous material spills – Hazardous materials that may be temporarily present on-site other than natural gas are typically solids, and usually only in small quantities. Trained hazardous material operations and response personnel are on-site for any operations or maintenance activities that involve the handling of bulk or containerized hazardous materials. Small quantities of water treatment chemicals are contained in the water treatment enclosures.

Transformer dielectric oil – The project site uses dry type EBOP transformers that do not contain dielectric oil. The smaller MBOP transformers contain FR3 “less-flammable” dielectric fluid – a biodegradable soybean oil. The maximum individual transformer oil capacity is 253 gallons and the total volume is 938 gallons.

Personnel injuries – For injuries requiring medical attention, the injured party or his/her companion shall seek appropriate medical attention for the injured. For serious injuries, call GMCC to summon local Emergency Responders per the Emergency Action Plan. For less serious injuries that require medical attention the injured shall obtain medical treatment at the nearest emergency medical care facility. All accidents and injuries (and near misses) shall be reported to FCE EHS.

***C. Plan Validation***

The executable elements of this Fire Emergency Plan consist of the manual activation of an Emergency ShutDown upon discovery, evacuation of the power plant area and notifications.

ESD buttons are all hard-wired in a fail-safe circuit. All fuel cell operating personnel are trained and regularly re-trained in a complete suite of safety programs.



## Fire Prevention Plan

### A. Egress

A Plant Layout drawing is provided in Appendix A. The plant emergency egress paths are depicted on the drawing.

### B. Emergency alarms and ShutDowns

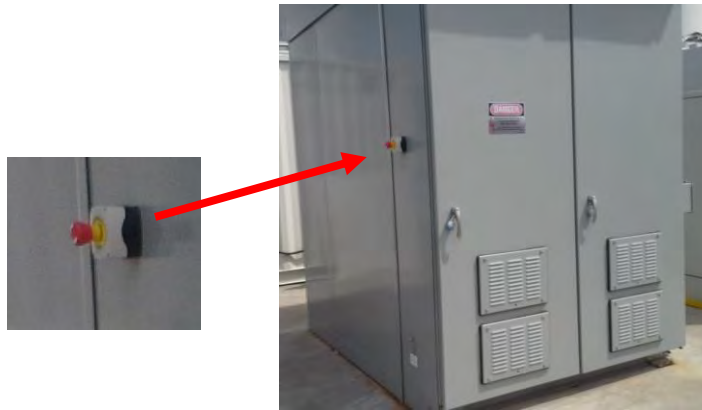
The fuel cell power plant is provided with Emergency ShutDown (ESD) pushbuttons. ESD pushbuttons have red mushroom caps and are clearly labeled. ESD pushbutton locations are indicated on the drawings in Appendix A and Appendix B. Photos of typical ESD pushbuttons are shown in Figure 1. Depressing an ESD pushbutton will immediately shut down fuel flow to the power plant as well as shut down all of the mechanical balance of plant equipment. **HOWEVER, THE ESD DOES NOT OPEN THE ELECTRICAL GRID TIE BREAKER, SO ELECTRICAL BALANCE OF PLANT COMPONENTS WILL REMAIN ENERGIZED. ADDITIONALLY, UNINTERRUPTABLE POWER SUPPLIES (UPS) WILL PROVIDE POWER TO A NUMBER OF MECHANICAL BALANCE OF PLANT COMPONENTS AND THE FUEL CELL MODULE WILL RETAIN SIGNIFICANT DC VOLTAGE POTENTIAL ENERGY IF OPERATING OR HOT PRIOR TO THE ESD.** (Exception – the SITE switchgear ESD button does open the electric grid tie-breaker; however, hazardous voltage may still remain.)

The following types of automatic acting emergency sensors are provided with the fuel cell power plant:

- Combustible gas detectors
- UV/IR Flame detectors
- Smoke detectors

In addition process flows, temperatures, pressures and voltages are continuously monitored for deviations from expected values. Process sensors are used to verify proper operation of the process and will quickly sense and shutdown the process upon severe deviations, such as would occur in the case of excessive seismic activity. Emergency sensors have either supervisory signals or are wired to alarm on sensor failure such that the plant will ESD on the loss of these devices. Emergency sensors are calibrated in accordance with an established schedule as described in the maintenance manual. Sensor locations, as well as classified hazardous areas, are depicted in the drawings provided in Appendix B.

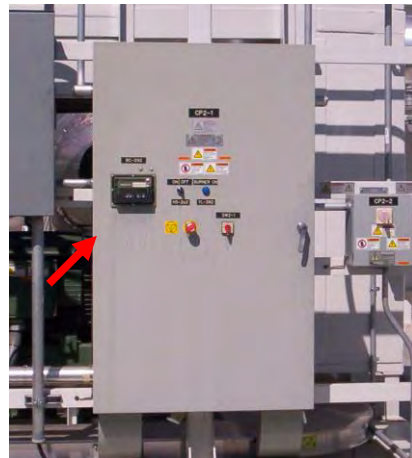
Sensor detection of flame, MBOP smoke, or presence of excessive combustible gas concentration (45% of Lower Explosive Limit [LEL]) will result in an Emergency ShutDown (ESD) of the fuel cell plant. In the case of combustible gases, detection of a concentration of approximately 25% LEL will result in a high LEL warning alarm. EBOP smoke detectors provide an alarm function only as other performance shutdowns protect the equipment in case of actual fire.



Tie Breaker Switchgear  
(*Site Electrical Disconnect*)



Electrical Balance of Plant



Skid 2, Main Process Skid Control Panel

**Figure 1: Typical Emergency ShutDown (ESD) Pushbuttons**

Fuel cell plant operating personnel are provided with portable gas detectors for use in operating and maintenance tasks including surveillance for gas leaks should such precautionary efforts be necessary.

**C. Fire prevention**

The fire prevention strategy for the fuel cell power plant consists of the following Plan elements:

- **Housekeeping**

The area around the fuel cell power plant shall be kept orderly and free of combustible and flammable materials, including combustible and flammable liquids, flammable gases and combustible and flammable solid materials. Trash shall not be allowed to accumulate. The water treatment system container shall not be used for general material storage.

- **Storage and Handling of flammables/combustibles**

**STORAGE OF FLAMMABLE AND COMBUSTIBLE MATERIALS IS PROHIBITED WITHIN THE PLANT ENCLOSURE WITHOUT PRIOR WRITTEN PERMISSION FROM THE LOCAL AUTHORITY HAVING JURISDICTION.** Transient flammables and combustibles may include gases, small containers of flammable liquids such as solvents, trash and virgin and spent consumables used in the fuel cell process. These materials are to always be stored in packaging appropriate for their material properties and retained on site for as short of a duration as feasible. Flammable and combustible materials are to be kept separated from sources of ignition, fuel piping and processing equipment and electrical equipment and shall be protected from weather. Appropriate packaging materials for consumable materials are as follows:

- Catalysts, virgin or spent – closed/sealed steel drums
- Desulfurizer media, virgin – manufacturer's original packaging
- Desulfurizer media, spent – closed/sealed steel drums

- **Flammable/combustible materials and potential ignition sources**

The following are flammable/combustible materials *potentially* present at the fuel cell power plant:

- Natural gas (present in piping and desulfurizer vessels only - no on-site storage)
- Electrical equipment
- Plastics
- Insulation jacketing
- Desulfurizer media (including forms of activated carbon and other, mainly non-flammable formulations)
- 50% aqueous solution Propylene Glycol EBOP chiller coolant and heat transfer medium
- Misc. new and used filter elements, PPE, packaging, etc.
- Granular nickel based catalyst (DOT Div. 4.2, PG II/III; transient storage only, never long-term)

Natural gas piping within the plant security fencing is identified with yellow "Natural Gas" pipe markers, complying with ANSI A13.1 requirements.

The following are potential ignition sources present at the fuel cell power plant:

- Heat from process
- Electrical equipment
- Catalysts
- Hot work
- Unauthorized Smoking or open flame
- Internal combustion equipment/vehicles

The fuel cell power plant design and procedures established to operate and maintain the plant have been formalized to minimize any potential for fire.

- The entire plant has been designed to and complies with the provisions of the ANSI/CSA safety code FC-1 (2004).
- The plant is equipped with automatic safety sensors to safely shut down the process in cases of leaking fuel or fire (Section B.)
- All fuel is pipeline supplied with minimal fuel holdup within the process.
- Desulfurizer vessels have been provided with pressure safety relief valves sized for fire emergencies.
- All of the plant piping has been designed in accordance with ASME B31.3 standard for process piping code. Piping is marked in accordance with ANSI A13.1.
- Areas of potential hazardous (classified) atmospheres have been identified and sources of potential ignition have been removed and any electrical equipment within complies with the area classification designation.
- Electrical equipment is designed to and complies with the provisions of UL1741.
- Smoking is NOT allowed within the fuel cell plant area.
- Hot Work within the fuel cell plant area is by Permit only, with potential sources of flammable materials removed from the area of potential ignition when hot work is conducted. Hot Work Permits are to be issued by the plant owner/operator. Additionally, any hot work conducted under the supervision of FuelCell Energy will also be permitted under the FCE Hot Work Permit program.

- **Portable Fire Extinguisher**

Sufficient type A:B:C portable fire extinguishers (20 lb. minimum), depicted in the drawing in Appendix A, are installed at the plant such that the travel distance to nearest extinguisher does not exceed 50 feet. Portable fire extinguishers required for specific maintenance procedures are brought to site by service personnel as special equipment for that procedure.

- **Inspections of plant area and fire prevention equipment**

All inspections and maintenance of fuel cell components and systems are to be performed in accordance with the latest revision of the plant maintenance manual. Operating personnel also conduct an informal “walk around” inspection every time they visit the plant site. As the plant operates remotely without the presence of operators, the walk around inspection is simply to check for any out of the ordinary situations or accumulated materials. FuelCell Energy operators log any negative findings into a Computerized Maintenance Management System (CMMS) database. Sensors are calibrated or replaced in accordance with an established maintenance schedule based on equipment manufacturer’s instructions; with work orders scheduled and records maintained by the database.

If, during an operator site visit or walkaround inspection a fuel leak is discovered, an immediate evaluation and disposition shall be undertaken. For sizeable leaks, an immediate plant shutdown may be necessary, while leaks of a very minor nature may be able to be addressed by such remedies as flange bolt retorquing or other measures. FCE operators are equipped with portable fuel gas (LEL) meters to assist in the evaluation of leak severity. Any discovered leak and its corrective measures shall be recorded in the CMMS database.

UV/IR flame detectors, combustible gas (LEL) sensors and smoke detector automatic sensors shall be tested, calibrated, maintained and/or replaced at the frequency provided in the SureSource plant maintenance manual. A summary of these requirements is provided below:

<b>Automatic Sensor</b>	<b>Frequency</b>	<b>Maintenance Action</b>
Skid 1 Smoke Detectors	18 mos.	Test & replace if required
EBOP Smoke Detectors	18 mos.	Test & replace if required
Combustible Gas Detectors	6 mos.	Clean, test & calibrate, if req'd.
UV/IR Flame Detector	18 mos.	Clean & Test

- **Fire protection system/equipment impairment**

Unintended impairment of any fire protection sensor system will automatically ESD the plant. Manual short-term sensor impairment for the purpose of on-site maintenance occurs only at times when maintenance personnel are on-site and vigilant for signs of fire or potential fire. As a policy, extended system impairment is not permitted with rare exceptions and only when alternative monitoring methods can be implemented by remote monitoring and for as short of a duration as possible.



- **Incident investigation and reporting**

Any fire-related incident shall be immediately reported to the Local Fire Department as “lead investigator.” Plant owner representatives as well as FCE-qualified personnel will be called upon to assist the Department in the site and technical aspects of the investigation. Such incidents will also be investigated by the fuel cell operator/manufacturer (FCE) as required by the manufacturer’s Certifying Agency. Results/conclusions of the investigation will be reported to the plant owner. External reporting to other agencies will be as directed by the responding Department commanders and as required by regulation, as established at the time of incident.

## **2.3 Plant/Project Safety Plan**

The following is the Safety Plan for the subject plant. This Safety Plan will be updated as necessary to appropriately reflect specific site conditions and limitations, as FCE becomes aware and as construction progresses.

### **Safety Plan**

FCE will address site security and personnel safety as the highest priority to ensure a safe and healthy work environment. Minimum safety requirements and policies have been identified and will be provided and enforced on all levels and for all organizations performing work at the facility during both the construction and operation phases of the project.

In addition, all contractors and subcontractors will be required to provide, adhere to, enforce, and report on their own safety policies and practices. Such policies, procedures and/or handbook will be provided to FCE prior to contract execution for FCE's review and consideration.

#### **A. Site Supervision**

FCE, or their prime construction subcontractor, will provide a construction/safety manager to be present while any work is being performed on site at any time. FCE Project Management representatives and EHS professionals will perform additional on-site review and inspections to further enforce all safety policies and practices.

Further, contractors and subcontractors will be required to have their own safety supervisor on site at all times when work is being performed. The safety supervisor is responsible for their personnel's adherence to all required and prudent safety policies and practices. The supervisor is to be responsible for:

- Enforcing safety policies and practices,
- Providing safety orientation for any new personnel onsite,
- Daily safety "toolbox" meetings covering daily activities and associated risks, by trade,
- Recording the daily safety meetings,
- Weekly safety status meetings and discussion topics,
- Performing and reporting on weekly safety audits,
- Maintaining a daily personnel attendance log (for personnel accounting),
- Site walks with FCE's safety and construction managers on request, and

- Monthly formal reports including labor hours worked, incidents (including near misses, recordable events, and reportable events) along with a detailed description of corrective actions, audit results, and a summary of any site walks that occurred during that period.

At any time, FCE or subcontractor's safety or construction management personnel can enforce a stop work directive to correct any safety infractions.

## **B. FCE Safety Program Policies**

Construction contractor and plant operator shall plan and conduct all work to safeguard persons and property from injury and will direct performance of work in compliance with reasonable safety and work practices and with applicable federal, state and local laws, rules, and regulations including but not limited to "Occupational Safety and Health Standards" promulgated by the U.S. Department of Labor. Work in areas adjacent to electrically energized equipment and/or operating natural gas equipment shall be performed in accordance with said practices, laws, rules, and regulations.

As part of FCE's continuing efforts to provide a safe and healthy workplace, it is required that all work activities be performed in accordance with all applicable regulatory requirements. While impossible to foresee all potential circumstances, the below list of Environmental, Health and Safety requirements constitutes the minimum basic elements to be followed during both the construction and operation phases of the fuel cell power plant project.

- SIGN IN: All individuals must sign in/out at the office each day that they are on site.
- ACCIDENT, ILLNESS & INJURY: All accidents and injuries occurring on the premises shall be reported immediately to the Construction Manager in charge of the work being performed, or during operation phase of plant, to the FCE EHS department as soon as possible.
- CHEMICAL RELEASE OR SPILL: Any release of chemicals on site, regardless of volume, must be immediately reported to the Construction Manager, or during operation phase of plant, to the FCE EHS department as soon as possible.
- COMPRESSED GAS MANAGEMENT: The management and use of compressed gas is to be performed in accordance with OSHA standard 29 CFR 1910.101 "Compressed Gasses, General Requirements."
- CONFINED SPACES: All work in "confined spaces" is to be managed in accordance with OSHA standard 29 CFR 1910.146.

- **CRANE HOIST & SLING SAFETY:** The operation of cranes and hoists is to be performed in accordance with OSHA standard 29 CFR 1910.179; and the use of slings is to be in accordance with OSHA standard 29 CFR 1910.184.
- **ELECTRICAL SAFETY:** All work involving electricity is to be performed in accordance with OSHA standards 29 CFR 1910 Subpart S, "Electrical Safety"; 1910.269 "Electric Power Generation, Transmission & Distribution; and NFPA 70E-2004 "Electrical Safety In The Workplace" as applicable.
- **EYE PROTECTION:** During all times that ANY work is being performed anywhere on the facility, all personnel at the facility must be wearing eye protection.
- **FALL PROTECTION:** All work performed at heights of six feet or greater must be provided with at least one form of fall protection that will either prevent a fall from occurring, or properly arrest a person's fall once the event has occurred. However, platforms, or other surfaces designed primarily for walking, shall be provided with an approved guardrail system when they are either; >4' above the adjacent floor or ground level, or, above dangerous equipment (conveyor belts, chemical baths, exposed rebar, etc...) regardless of height. In all cases, work at height must be performed in accordance with OSHA standards 29 CFR 1910.23, 132, and 503.
- **HAND & PORTABLE POWER TOOL SAFETY:** Hand and portable power tools are to be used in accordance with OSHA standard 29 CFR 1910 Subpart P.
- **HAZARD COMMUNICATION; RIGHT to KNOW:** 29 CFR OSHA standard 29 CFR 1910.1200: Employees shall not be exposed to Hazardous Chemicals without first receiving training on the associated physical and health hazards and the measures needed to protect the employee from these hazards.
  - FCE utilizes green on white Target Organ Labels identifying the Name and the Physical & Health hazards of a material; these labels shall be used for all containers not otherwise adequately labeled by the manufacturer.
  - Hazardous materials brought on site shall be labeled and a Material Safety Data Sheet (MSDS) supplied to the Environmental Health and Safety (EHS) Department prior to working with the chemical.

- An MSDS station detailing all chemicals currently onsite is available for review.
- HAZARDOUS MATERIALS: FCE EHS is to be notified in advance of all hazardous materials to be brought on site. Storage, use and off-site transportation of these materials shall be performed in accordance with applicable requirements of the Connecticut General Statutes, the Regulations of Connecticut State Agencies and Titles 29 (OSHA), 40 (EPA), 49 (DOT) of the Code of Federal Regulations.
- HOT WORK PERMIT SYSTEM: A formal "Hot Work Permit" program is used as part of FCE's overall Fire Prevention Program. Hot work is any operation that introduces a potential ignition source, which in the presence of combustible or flammable materials can result in a fire. HOT WORK includes, but is not limited to, operations such as brazing, cutting, grinding, soldering, torching, and welding. The use of a Hot Work Permit is required for all hot work operations outside of designated hot work areas. Hot work can be performed without a permit only in areas specifically designated and posted as a "Hot Work" area.
- LADDER SAFETY: The use of ladders is to be done in compliance with the following OSHA standards:
  - 29 CFR 1910.25 - PORTABLE WOOD LADDERS
  - 29 CFR 1910.26 - PORTABLE METAL LADDERS
  - 29 CFR 1910.27 - FIXED LADDERS
  - 29 CFR 1910.29 - MANUALLY PROPELLED MOBILE LADDER STANDS & SCAFFOLDS



- LOCKOUT TAGOUT PROGRAM: All servicing and maintenance of equipment is to be performed in accordance with the requirements of OSHA standard 29 CFR 1910.147 or 269 as applicable. These standards require locking out all potential energy sources prior to the performance of work.
- PERSONAL PROTECTIVE EQUIPMENT: In accordance with OSHA standard 29 CFR 1910.132-138 and Subpart I, work is to be performed using all necessary PPE. Hazard Assessments and Training in the use of required PPE are to be performed and documented prior to performance of work. PPE shall be removed before leaving the work area and disposed of according to waste management procedures to ensure that contaminants are not spread to personnel, through the facility(s), and/or to the environment.
- POWERED INDUSTRIAL TRUCKS: Forklifts and other industrial lift trucks are to be operated only by personnel trained in accordance with OSHA standard 29 CFR 1910.178.
- POWERED PERSONAL LIFT TRUCKS: Powered personal lift trucks are to be operated only by personnel trained in accordance with OSHA standard 29 CFR 1910.67 and 29 CFR 1926.453.
- SAFETY DEVICES: Equipment safety devices are not to be removed, bypassed or otherwise modified without review and approval by FCE EHS Dept.
- SCAFFOLDING: All use of scaffolding shall be in accordance with the following OSHA standards:
  - 29 CFR 1910.28 – "Safety Requirements for Scaffolding"
  - 29 CFR 1910.29 – "Manually Propelled Mobile Ladder Stands & Scaffolds"
- STORMWATER POLLUTION PREVENTION: In accordance with the Connecticut Department of Environmental Protection (CTDEP) "General Permit for the Discharge of Stormwater Associated with Industrial Activity"; activities which will directly or indirectly release hazardous or non-hazardous materials into the storm water system are not permitted. All site practices will be to prevent or minimize pollution of stormwater. Operation of the fuel cell plant in and of itself does not invoke stormwater permitting requirements, however, fuel cells that are installed at and owned by a larger industrial facility may require registration under the General Permit. Construction phase stormwater permitting and compliance for this site, if applicable, is the responsibility of the Construction General Contractor.
- WASTE MANAGEMENT: FCE is to be notified in advance of all waste to be generated. Under state and federal rules, FCE, as the site operator, is the "Generator" of all waste generated/created on site(s). As such, FCE is responsible for the proper Management, Storage, Transportation and Disposal of all wastes

generated at site. This is to be done in accordance with all applicable requirements of the Connecticut General Statutes, the Regulations of Connecticut State Agencies and Titles 29 (OSHA), 40 (EPA) and 49 (DOT) of the Code of Federal Regulations.

- **WORKING ALONE:** Working alone can introduce additional hazards not necessarily present during the course of performing work with other personnel. The biggest risk in working alone is during the occurrence of an incapacitating injury to the lone employee; a lack of timely medical attention could exacerbate the injury leading to greater harm. To prevent this, tasks must be assessed for hazards before assigning the employee(s) to perform them alone. If hazards do exist, either periodic monitoring, assignment of additional personnel, or re-scheduling of the work must be done. Further, it is important that task limitations be clear in order that new hazards are not introduced during any work performed alone. Employees performing work alone shall always contact GMCC by cell phone upon entering the facility site and upon leaving.
- **GENERAL DUTY CLAUSE:** The General Duty Clause of the Occupational Safety and Health Act requires that employers provide a place of employment that is free of recognized health or safety hazards to employees. It is FCE policy to provide such a workplace. Employees are encouraged to discuss any known or perceived health or safety issues or concerns with FCE management or EHS associates.

### **3 SITE SECURITY & ACCESS**

Public access to the fuel cell equipment is restricted by its location at a private facility. Additional security is provided by the locked eight foot high chain link fence enclosure surrounding the plant. The enclosure is equipped with personnel and equipment doors or gates for necessary operator access. All doors/gates are kept locked when facility personnel are not present. Emergency Fire Department access to the site would be obtained by removing the lock with a bolt cutter.

All FCE power plants are remotely monitored 24 hours per day, 7 days per week, year round by FCE's GMCC operations center. Any tampering or unauthorized manipulation of fuel cell components that would result in any significant performance change for the plant will be immediately detected by the GMCC operator and/or result in an Emergency ShutDown of the plant, restoring the plant to a safe condition. All FCE fuel cell power plants are designed for "fail-safe" operation, where all foreseeable process deviations have been considered and the consequences minimized, through a hazard and operability (hazop) analysis.

#### **4 EMERGENCY RESPONDER / LOCAL COMMUNITY COORDINATION & NOTIFICATION SYSTEM**

FCE will coordinate with local emergency response departments to familiarize personnel with the operations and equipment installed at the site. At a point prior to plant mechanical completion, FCE will contact the Local Fire Department to schedule a walk around tour and training event for the near-completed installation. Either prior to or at this time, a compilation of Safety Data Sheets for chemicals used on the site can be provided to the Fire Department. Pursuant to Emergency Planning and Community Right-to-Know Act (EPCRA) Section 311, New Facility Hazardous Chemical Inventory Notifications will be made to the CT DEEP, Derby Local Emergency Planning Committee and the Derby Fire Department for any chemical that exceeds its respective Threshold Planning Quantity at the project site. The facility will not have any Extremely Hazardous Substances on site in excess of applicable Threshold Planning Quantities.

During the construction phase, prior to a scheduled delivery of any piece of major equipment, the police department will be notified and contracted to manage and, as required, control local traffic. Prior to connecting or making natural gas available at the facility, FCE will coordinate with the local fire department, provide training regarding the facility equipment and facility safety features, tour department personnel and provide a description of how the plant facility will respond should a fire, smoke, or volatile gas release occur.

FCE will record the names and contact information of those local residents that request to be informed of any actual emergency response situation that may develop at the subject power plant which may affect them. The names and contact information of the local residents will be incorporated into the Emergency Action Plan in the table provided for notification in an emergency response situation that could potentially affect these residents. Responsibility for making such notifications will be the on-site manager during the construction phase of the project, and GMCC during the operation phase of the project.

**Exhibit F**

SHPO Correspondence

*See attached.*



May 23, 2019

Exhibit F



Department of Economic and  
Community Development

State Historic Preservation Office

March 20, 2019

Mr. Anthony Jones  
Derby Fuel Cell LLC  
c/o Fuel Cell Energy, Inc.  
3 Great Pasture Road  
Danbury, CT 06810

Subject: Derby Fuel Cell  
200 Roosevelt Drive  
Derby, CT  
ENV-19-0224

Dear Mr. Jones:

The State Historic Preservation Office has reviewed the information submitted for the above-named property pursuant to the provisions of the Connecticut Environmental Policy Act.

It is our opinion that the property located at 200 Roosevelt Avenue, known as the Premier and Potter Printing Press Co., is potentially eligible for listing on the State Register of Historic Places.

The proposed scope of work includes installation of a fuel cell generating facility, including one or more carbonate fuel cells, transformers, power conditioning unit, and other ancillary equipment, to be located on a vacant portion of the parcel to the northwest of extant structures. The SHPO has determined that the undertaking as described above will constitute no adverse effects to historic resources.

The State Historic Preservation Office appreciates the opportunity to review and comment upon this project. These comments are provided in accordance with the Connecticut Environmental Policy Act. For further information please contact Marena Wisniewski, Environmental Reviewer, at (860) 500-2357 or [marena.wisniewski@ct.gov](mailto:marena.wisniewski@ct.gov).

Sincerely,

A handwritten signature in blue ink, appearing to read "Catherine Labadia".

Catherine Labadia  
Deputy State Historic Preservation Officer

State Historic Preservation Office

450 Columbus Boulevard, Suite 5 | Hartford, CT 06103 | P: 860.500.2300 | [DECD.org](http://DECD.org)

*An Affirmative Action/Equal Opportunity Employer An Equal Opportunity Lender*

**Exhibit G**

NDDB Correspondence

*See attached.*



Petition of Derby Fuel Cell, LLC  
May 23, 2019  
Exhibit G

79 Elm Street • Hartford, CT 06106-5127

[www.ct.gov/deep](http://www.ct.gov/deep)

Affirmative Action/Equal Opportunity Employer

March 5, 2019

Anthony Jones  
Derby Fuel Cell LLC  
3 Great Pasture Road  
Danbury CT 06810  
[ajones@fce.com](mailto:ajones@fce.com)

Project: Derby Fuel Cell Project, 200 Roosevelt Drive, Derby, CT  
NDDB Determination No.: 201903280

Dear Mr. Jones,

I have reviewed Natural Diversity Database (NDDB) maps and files regarding the area of work provided for the proposed construction of a fuel cell generation facility at 200 Roosevelt Drive in Derby, Connecticut. I do not anticipate negative impacts to State-listed species (RCSA Sec. 26-306) resulting from your proposed activity at the site based upon the information contained within the NDDB. The result of this review does not preclude the possibility that listed species may be encountered on site and that additional action may be necessary to remain in compliance with certain state permits. This determination is good for two years. Please re-submit a new NDDB Request for Review if the scope of work changes or if work has not begun on this project by March 5, 2021.

Natural Diversity Data Base information includes all information regarding critical biological resources available to us at the time of the request. This information is a compilation of data collected over the years by the Department of Energy and Environmental Protection's Natural History Survey, cooperating units of DEEP, landowners, private conservation groups and the scientific community. This information is not necessarily the result of comprehensive or site-specific field investigations. Consultations with the NDDB should not be substitutes for on-site surveys necessary for a thorough environmental impact assessment. Current research projects and new contributors continue to identify additional populations of species and locations of habitats of concern, as well as, enhance existing data. Such new information is incorporated into the database as it becomes available.

Please contact me if you have further questions at (860) 424-3378, or [karen.zyko@ct.gov](mailto:karen.zyko@ct.gov) . Thank you for consulting the Natural Diversity Database.

Sincerely,

A handwritten signature in blue ink, appearing to read "Karen Zyko".

Karen Zyko  
Environmental Analyst